# VMS® Interface for QMS® Crown Printers

1800208-001G

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# 1

# Introduction

## In This Chapter . . .

- Information about the software licensing agreement
- Introduction to the DECnet interface option
- Introduction to the serial/parallel option
- Introduction to the HSL application for DECnet
- Introduction to PS Executive Series Utilities for DECnet
- Descriptions of the contents of each chapter of this manual

# License Agreement

The host software must be installed on all hosts that are to have access to the printer.

» **Note:** *The terms of the licensing agreement that you accepted by opening the package containing the host software restrict the software installation to multiple computers at* ***a single site*** *without the right to distribute, rent, sub-license, or lease the software or documentation. A separate license agreement and fee are required* ***for each site*** *at which the software is used. Single site means the location of the target printer for which there are common multiple computer systems.*

# QMS VMS Host Software Option

The QMS VMS host software is compatible with DECnet Phase IV and Phase V, Alpha AXP, and systems running VMS and OpenVMS.

This manual describes the installation of the host software, setting up queues, printing files, and troubleshooting for two separate VMS environments for QMS Crown printers:

- VMS using the DECnet protocol
- VMS using serial/parallel

# The QMS DECnet Interface Option

The DECnet interface option for QMS Crown printers provides a hardware and software connection to your DECnet network. See your printer user's guide for installation instructions for your hardware interface. With the interface hardware properly installed in the printer and the accompanying host software loaded on the host, the QMS printer becomes a node on the network.

The host software

- Creates execution queues.
- Creates generic queues specific to printer-supported language and page layout types, if desired.
- Performs an Installation Verification Program test upon installation, if desired.
- Adds a HELP file to your VMS on-line HELP facility.
- Creates a printer-specific characteristic file which identifies printer-supported /PARAMETER qualifiers.
- Creates a Remote Console capability as part of the QMS PS Executive Series Utilities to remotely configure and monitor printer status from anywhere on the network.
- Includes a network application, Hot Status Listener, to receive printer error and backchannel messages from DECnet- connected printers.
- Performs load balancing that automatically distributes print jobs equally to all printers on generic queues.
- Installs QMS VMS Release Notes that document new features and may be viewed or printed.

Refer to chapter 2 for step-by-step instructions on installing the DECnet host software.

## Included with the DECnet Option

The DECnet interface option includes the following components:

- Host software provided on popular media types for DECnet- and serial/parallel-connected printers.
- DECnet interface boards for either thin-wire, thick-wire, or 10BaseT Ethernet (to be installed by a QMS-authorized field engineer).
- LN03 Plus printer emulation and compatible fonts on a 3.5" disk and requires a hard drive or a cartridge. (and a downloadable image on the host software for printers which do not have a 3.5" disk drive).
- Installation instruction sheet for the 3.5" disk version of the LN03 Plus emulation.
- LN03 Plus Emulation Guide for QMS Printers.
- QMS Crown Remote Console User's Guide.
- *VMS Interface for QMS Crown Printers.* (This manual)

# For Serial/Parallel Connected-Printers

The QMS VMS host software option for QMS Crown printers provides a software interface for serial/parallel-connected printers.

Refer to chapter 3 for instructions on installing the serial/parallel symbiont.

## Included with the Serial/Parallel Option

The serial/parallel interface option includes the following components:

- Host software provided on popular media types for DECnet- and serial/parallel-connected printers.

- LN03 Plus printer emulation and compatible fonts on a 3.5" disk (and a downloadable image on the host software for printers which do not have a 3.5" disk drive).
- Installation instruction sheet for the 3.5" disk version of the LN03 Plus emulation.
- LN03 Plus Emulation Guide for QMS Printers.
- *VMS Interface for QMS Crown Printers*.

# LN03 Plus Printer Emulation

The QMS-developed LN03 Plus emulation is made available in several formats.

- A download image for QMS Crown printers that have a hard disk. (Comes standard with the QMS VMS host software.)
- A 3.5" diskette for QMS Crown printers that have a floppy drive and hard disk. This can be purchased separately and is included with the QMS DECnet option.
- A RAM card for those QMS printers that have optional RAM slots.

Refer to the *LN03 Plus Emulation Guide for QMS Printers* for installation instructions.

# Accessing Printer Features

QMS Crown printers have many advanced document handling features: multiple input bins, multiple output bins, duplexing, stapling, collated stacking, and more. Check your printer user's guide to determine which options are available on your printer. Once the printer has been connected, all users may access these features by using qualifiers to the VMS PRINT command for both DECnet and serial/parallel printer installations.

Many printer manufacturers provide only one set of parameters that the system administrator must use for all print jobs. Using the standard VMS PRINT command qualifiers, however, you can customize the output for each job by temporarily changing the default configuration setting on the QMS Crown printer. This is accomplished through the QMS-provided characteristic file which contains the mapping of the PRINT qualifiers to appropriate Document Option Commands (DOC). Detailed information about using Document Option Commands and the PRINT command qualifiers is in chapter 4, “Queues, /Parameters, and Logicals.”

# About this Manual

This manual covers the following topics:

| | | |
|---|---|---|
| **1** | **Introduction** | Presents an overview of the QMS VMS Host Software, the QMS DECnet interface option, and this manual. |
| **2** | **DECnet Host Software Installation** | Provides detailed instructions for installing the QMS host software for DECnet (Ethernet)-connected printers. |
| **3** | **Serial/Parallel Host Software Installation** | Provides detailed instructions for installing the QMS host software for host-, LAT-, or serial/parallel-connected printers. |
| **4** | **Queues, /PARAMETERS, and Logicals** | Explains how to create, manage, and merge print queues. |
| **5** | **Printing** | Describes set-up and form modules as well as device control libraries for storing modules. |

| | |
|---|---|
| **6 Troubleshooting** | Outlines common error and status messages related to the printer for host software installation. An installation troubleshooting flowchart is also included. |
| **A QMS Customer Support** | Provides product sales and support telephone numbers and describes how to communicate with QMS through the QMS Bulletin Board, CompuServe, Internet, and Q-FAX. |
| **Index** | |

## Typographic Conventions

The following typographic conventions are used in this manual:

| | |
|---|---|
| `Mixed-Case Courier` | Text you type, and messages and information displayed on the screen |
| *`Mixed-Case Italic Courier`* | Variable text you type; replace the italicized word(s) with information specific to your printer or computer |
| `UPPERCASE COURIER` | Information displayed in the printer message window |
| *lowercase italic* | Variable information in text and VMS commands |
| UPPERCASE | VMS commands and qualifies; file, module, and library names |
| ↵ | Press the Enter key (PC or VAX terminal) or Return key (Macintosh) |
| $ | VMS system prompt |
| " | Continued command |
| _$ | Continued command from the line above |
| [ ] | Optional |
| .... | Items may be repeated |

» **Note:** *Notes contain tips, extra information, or important information that deserves emphasis or reiteration.*

▲ **Caution:** *Cautions present information that you need to know to avoid equipment damage, process failure, or extreme annoyance.*

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# 2

# DECnet Host Software Installation

## In This Chapter . . .

- DECnet options from the printer control panel
- Pre-installation instructions
- Installing DECnet host software
- The Hot Status Listener application
- PS Executive Series Utilities

# Introduction

The QMS VMS host software is compatible with DECnet Phase IV (DECnet-VAX) and Phase V (DECnet-OSI), Alpha AXP, and systems running VMS and OpenVMS.

This chapter takes you step-by-step through the installation of the QMS DECnet print symbiont and associated software for DECnet (Ethernet)-connected printers.

# Before You Begin

**Phase IV (DECnet-VAX):**

Before beginning the installation of host software on DECnet Phase IV, identify the NCP (Network Control Program) node name for your printer.

- Node name. The printer's node name must be a unique identifier on your network. A valid name may have up to six characters (alpha or numeric) but must have at least one alpha character.

» **Note:** *The node name is appended to the assigned queue name automatically. We recommend you choose both names at this time.*

- Network address. You assign a unique address to the printer. The address consists of an area number (01 to 63) and a node number (0000 to 1023). The valid format for the network address is *xx.xxxx*.

In each case, the software installation prompts you for this unique network identifier. This will enable your printer to become a good network citizen.

**Phase V (DECnet-OSI):**

Before beginning the installation on DECnet Phase V, create an NCL (Network Control Language) node entry for the printer. You need to add the printer to the local or DNS Register via

```
SYS$COMMON:[SYSMGR]DECNET DNS REGISTER.COM
```

or

```
SYS$COMMON:[SYSMGR]DECNET_LOC_REGISTER.COM
```

» **Note:** The command you use depends on the topology of your network. *NCL, rather than NCP, verifies that you set up the network and node information necessary for proper printing. Due to limitations of the NCL command-line interface, the installation routine will not create a node and address for the printer you're installing. You must use the decnet_loc_register.com for LAN (local name space configurations) or decnet_dns_register.com for WAN (distributed name space configurations) utility. The installation and release notes warn you to create a node prior to completing installation.*

- Node name. The printer's node name must be a unique identifier on your network. A valid name may have up to six alphabetic or numeric characters for LAN or up to 1024 alphabetic or numeric characters for WAN. In either case, a valid name requires at least one alphabetic character.
- Network address. You assign a unique address to the printer. The address consists of an area number (01 to 63) and a node number (0000 to 1023). The valid format for the network address is *xx.xxxx*.

In each case, the software installation prompts you for this unique network identifier. This will enable your printer to become a good network citizen.

» **Note:** *The host software is supported for VMS system versions 5.0 through 6.0.*

# Setting Up the Printer

The DECnet interface option shares its configuration menu on the printer control panel with the TCP/IP interface option. Before beginning the software installation, use the following instructions to configure the DECnet-specific interface options (Administration/Emulations/DECnet-TCP/IP menu). See your printer user's guide for instructions on how to use the printer control panel.

**DECnet-Specific Configuration Options**

- Mode
- Emulation
- Min K Spool
- Spooling
- DECnet Address
- DECnet HSL
- Packet Size
- Multicast Pkts.
- PS Protocol
- Def Job Prio

## Mode Option

The default setting for the DECnet-TCP/IP interface Mode option is Enabled (that is, the interface is ready to communicate with the host). If you must disable the interface at any time, use the Mode option in the DECnet-TCP/IP menu. See “Disabling a Printer Interface” in chapter 6, “Troubleshooting.”

## Emulation Option

Use the Emulation option in the DECnet-TCP/IP menu to choose a default emulation for print jobs received over the DECnet-TCP/IP interface:

» **Note:** *Not all emulations are supported on all QMS printers. Check your user's guide to determine which ones are supported on your printer.*

- Select ESP for Emulation Sensing Processor. ESP mode is the printer default. In ESP mode, the printer examines all print jobs to interpret the emulation.

» **Note:** *If you use generic queues that are set up for the individual emulations supported by the printer or if you include QMS Document Option Commands (DOC) to specify an emulation for the print job, your file bypasses ESP mode. The generic queues that the installation program creates implicitly define the emulation of the file by sending the appropriate DOCs in a prologue prepended to the beginning of the file.*

- Select PostScript if you send only PostScript files.
- Select PCL *x* if you send only HP PCL (HP LaserJet emulation) files.
- Select HPGL if you send only HP-GL (HP plotter emulation) files.
- Select LN03+ if you send only DEC LN03 Plus laser printer emulation files.
- Select QUIC if you send only QMS QUIC II files.
- Select Lineprinter if you only send Lineprinter files.
- Select CCITT if you send files that use CCITT Group 3 or 4 data compression (such as fax transmissions or stored image data).
- Select Hexdump for a hex dump of all incoming print jobs on the DECnet-TCP/IP interface. A hex dump is useful for diagnosing printer-host communication problems. When set for hex dump, the printer prints the hexadecimal values of all bytes received through the interface.

## Min K Spool/Spooling Options

The printer's memory (including a portion of the internal hard disk) is used for spooling print jobs from the host. All interfaces on the printer share the total number of kilobytes available in memory. By default, a minimum of 15 KB (the Min K Spool option in the DECnet-TCP/IP menu) is dedicated to spooling jobs received over the DECnet-TCP/IP interface. (Each interface on the printer is guaranteed a minimum of 15 KB unless the default setting is changed at the printer control panel.) The maximum available space for job spooling depends on your printer's RAM and disk configuration. For most applications, the default spooling configuration is adequate.

The Spooling menu option controls whether jobs are spooled always, only when the printer is idle but may still be printing a job, or only when the printer is completely idle.

If you do not use the serial, parallel, or LocalTalk interfaces on the printer, you can disable them and transfer their 15 KB guaranteed space to an area normally reserved as a shared space. Disabling all of these interfaces adds 45 KB to the area that the DECnet-TCP/IP interface could use for spooling. Disabling these interfaces, however, prevents access to the printer from any of these connections. If you want to disable the serial, parallel, or LocalTalk interfaces, see your printer user's guide.

## DECnet Address Option

Set the DECnet Address via the control panel to assign the printer's unique DECnet network address. The DECnet address of the printer must be a unique address on the network. (See “Before You Begin,” earlier in this chapter, for an explanation of the address format.)

» **Note:** *The DECnet node number must be right justified. For instance, enter an address of 1.6 as 01.0006.*

*When the printer displays its address on the start-up and status pages, all leading zeros in the address are truncated. To use the previous example again, the address 01.0006 displays as 1.6.*

1 **If the printer is on line, press the Online/Offline key to take the printer off line.**

2 **Press the Menu key to enter the printer Configuration menu.**

3 **Press the Next key until the message window displays `ADMINISTEATION`, and then press the Select key.**

4 **Press the Next key until the message window displays `COMMUNICATIONS`, and then press the Select key.**

5 **If your printer supports two optional interfaces, you will `NETWORK 1` and `NETWORK 2` options.**

- If you're configuring an interface in port 1, select `NETWORK 1`.
- If you're configuring an interface in port 2, select `NETWORK 2`.

6 **Press the Next key until the message window displays DECnet-TCP/IP and press the Select key.**

7 **Press the Next key until the message window displays `DECNET ADDRESS`, and then press the Select key.**

8 **Press the Next or Previous key until the value you want for the first digit displays, and then press the Select key.**

9 **Repeat step 8 for the second digit of the address.**

The first two digits of the address make up the area number. The area number can be any unique number from 01 to 63.

» **Note:** *The DECnet node number must be right justified. For instance, enter an address of 1.6 as 01.0006.*

10 **Press the Select key when the period in the address flashes.**

The first digit of the next component of the address, the node number, begins flashing.

11 **Use the Next or Previous key until the value you want displays, and then press the Select key.**

12 **Repeat step 11 for each remaining digit of the node number.**

The node number can be any unique number from 0000 to 1023.

When you press the Select key after you've entered the last digit, the printer momentarily displays the address you selected and then returns to the DECNET-TCP/IP menu.

**13 Press the Online/Offline key to put the printer back on line.**

The new DECnet address takes effect immediately after you turn the printer off and on again.

## DECnet HSL {Hot Status Listener} Option

By default, this option is Disabled. When Enabled, this option allows the printer to send printer error and emulation-generated backchannel messages to the host system if the Hot Status Listener (HSL) application has been installed on the host.

## Packet Size Option

This option is set to 558 bytes by default. It is the minimum packet size which will be sent by the printer to the host. This packet size is read only if the host sending data to the printer is not in the same area. This value can change based upon the type of router being used.

## Multicast Pkts {Packets} Option

The default setting for this option is Enabled to allow the maintenance of a routing table. This routing table permits the printer to communicate through a router when necessary.

## PS {PostScript} Protocol Option

QMS Crown printers support a new protocol for communication between the printer and a host computer over a serial, parallel, or optional interface connection. This new protocol is called PS protocol. This binary communications protocol (BCP) allows any 8-bit binary value (0-255) to be treated as data, while allowing a few of the values to function as special control characters. When communicating 8-bit binary data in binary, binary fixed, quoted binary, or quoted binary

fixed mode, the printer uses the quoting mechanism of the binary communications protocol to distinguish between the special control characters and print job binary data.

To differentiate data from the special control characters, any data that is the same as one of the following special control characters must be quoted:

| ASCII Keyboard | ASCII Name | ASCII Hex | Control Function |
|---|---|---|---|
| ^A | SOH | 0x01 | Quote data character |
| ^C | ETX | 0x03 | Abort job and flush to end of file |
| ^D | EOT | 0x04 | End-of-file marker |
| ^E | ENQ | 0x05 | (Reserved for future use) |
| ^Q | DC1 | 0x11 | XON in XON/XOFF flow control |
| ^S | DC3 | 0x13 | XOFF in XON/XOFF flow control |
| ^T | DC4 | 0x14 | Job status request |
| ^\ | FS | 0x1C | (Reserved for future use) |

A data byte is quoted by replacing it with a two-character sequence. The first character is a ^A (ASCII hex 0x01), and the second character is the character itself XORed with the ASCII value 0x40. For example, to send the value 0x14(^T) as data, send the two-character sequence 0x01 0x54 (^A T); ASCII “T” is the result of exclusive XORing ^T with 0x40.

This method of quoting guarantees that whenever the printer receives any of the eight control characters, the control function is intended regardless of whether the preceding character is a ^A. Any data byte not equal to one of the eight special control characters is transmitted by sending the data byte. For more information on BCP and quoting, see the *PostScript Language Reference Manual* (Adobe Systems, Inc., Reading, MA: Addison-Wesley, 1990, ISBN 0-201-18127-4), the “Adobe Serial and Parallel Communications Protocols Specification” (in *Adobe Developer Support.* Adobe Systems, Inc., February 14, 1992), and the “PostScript Language Reference Manual” (in *Supplement for Version 2011*, Adobe Systems, Inc., January 24, 1992).

## Options

The following options are available in the PS Protocol menu:

| **Menu** | Administration/Communications/*Interface*/PS Protocol | |
|---|---|---|
| **Choices** | **Name and Description** | **Interfaces** |
| | Normal—Enables standard, ASCII hex protocol. Data is sent and received in ASCII format. This mode is recommended if you do not print binary data. It was designed for data in the printable ASCII range. Print jobs can alter the PS protocol value through PostScript operators. | Parallel, Serial, Ethernet, Token-Ring, LocalTalk |
| | Normal Fixed—Enables standard, ASCII hex protocol. Print jobs cannot alter this value through PostScript operators. | Parallel, serial, Ethernet, Token-Ring, LocalTalk |
| | Binary—Enables binary communications protocol. Print jobs can alter this value through PostScript operators. Data in the printable ASCII range also prints). | Parallel, Serial, LocalTalk, Ethernet, Token-Ring |
| | Binary Fixed—Enables binary communications protocol. Print jobs can not alter this value through PostScript operators. Data in the printable ASCII range also prints. | Parallel, Serial, LocalTalk, Ethernet, Token-Ring |
| | QBinary (Quoted Binary)—Enables binary communications protocol. Print jobs can alter this value through PostScript operators. Data in the printable ASCII range also prints. Use the special quoting mechanism for the special characters and ^D (EOF). | Ethernet, Token-Ring |

| | | |
|---|---|---|
| | Qbinary (Quoted Binary) Fixed—Enables binary communications protocol. Print jobs cannot alter this value through PostScript operators. Data in the printable ASCII range also prints. Use the special quoting mechanism for the special characters and ^D (EOF). | Ethernet, Token-Ring |
| **Default** | Normal | |
| **Notes** | A data stream sent through the serial or parallel interface using Binary is treated the same as a data stream sent through an optional network interface using QBinary. However, a data stream sent through an optional network interface using QBinary is not treated the same as a data stream sent through the same interface using Binary. | |

## Advantages

The main advantage of using the Binary, Fixed Binary, Quoted Binary, and Quoted Fixed Binary PS Protocol modes when sending binary data is that these modes compress the data stream allowing your documents to be smaller so you can send smaller jobs to the printer. For example, some device drivers can format bitmap images as binary data instead of as ASCII hex data.

## Implementation

To implement PS Protocol for sending binary data on your system you need a device driver available with some applications or operating systems, or you can alternatively use a program to read the data and write out the quoted characters. Contact your third-party software vendor for information on available application-specific device drivers.

### Def {Default} Job Prio {Priority} Option

The Def Job Prio option allows you to specific which jobs are printed first, according to the interface through which they are received, when jobs are received simultaneously. In other words, you can give jobs received via the DECnet - TCP/IP interface priority over jobs received via the parallel and serial interfaces, or vice versa. Valid choices range from 001 to 099, with 001 meaning highest priority. The factory default is 001.

# If This is a Software Update

There are currently two choices available to update the software.

## Updating from a Previous Version

If you're updating your host software from a previous version and you want to save predefined set-up files, move them from the old device control library QMS$DEVCTL20.TLB at this time. To do this, use the following commands:

```
$ library/extract=module_name -↵
_$ SYS$LIBRARY:QMS$DEVCTL20.TLB -↵
_$ /OUT=module_name.tmp↵
```

## Updating Using the Device Control Library Update Procedure

A Device Control Library update utility has been provided in the sys$common:[sysmgr] directory. To run this procedure, type

```
$ @sys$common:[sysexe]qms$update_lib↵
```

» **Note:** *This procedure provides a user-friendly method of copying library modules from one Device Control Library to another. Additional information is displayed when this procedure is run.*

# Installing the DECnet Host Software

The QMS host software for DECnet-connected printers checks for the presence of DECnet Phase IV or Phase V protocol and prompts your responses accordingly.

## Phase IV and Phase V Installation

The following procedure describes the installation of DECnet Phase IV and Phase V host software. Any differences between the two installation procedures are noted.

1 **After mounting the host software media on the input device and logging in under the system account, begin the installation program by typing this command at the host:**

```
$ @SYS$UPDATE:VMSINSTAL↵
```

2 **After the installation program banner, the following prompt displays:**

```
* Are you satisfied with the backup of your system disk?
```

If you're satisfied with your backup copy of the system disk, type Y or press Enter. Type N to exit the program if you have not made a backup copy.

If you answered Y to the prompt, the system notifies you that it is moving the Release Notes located on the SYS$UPDATE directory to the system help directory.

3 **The installation program prompts you for the name of the device where you have mounted the software tape:**

```
* Where will the distribution volumes be mounted?
```

Type the device name and press Enter.

**4 The program next prompts you for the name of the save set:**

```
* Enter the products to be processed from the
first distribution volume set.

* Products:
```

Type the product name from the distribution software tape label. The name has the format QMSSMBPSE*xxx* where *xxx* is the version of the software. For example, you would type

```
QMSSMBPSE031↵
```

if you're installing Version 3.0.

**5 The next prompt asks for any options you want to use during installation of the software:**

```
* Enter installation options you wish to use [NONE]:
```

If you don't want to use any installation options, press Enter.

If you want to create a .LOG file on the host containing all prompts from the installation, type L and press Enter.

Other options you can use are documented with the VMSINSTAL program in your VMS manuals.

This message displays:

```
* The following products will be processed:

   QMSSMBPSE V3.x

%VMSINSTAL-I-RESTORE, Restoring product save set A ...
%VMSINSTAL-I-REMOVED, The product's release notes
have been successfully moved to SYS$HELP.
```

Refer to the Version 3.x Release Notes, located in the SYS$HELP directory, for information on configuring the host software for other/additional interfaces.

**6 You're now asked whether you're installing a DECnet or a serial/parallel symbiont:**

```
* Configure host software for a serial/parallel
interface (rather than DECnet) [NO]?
```

Press Enter to indicate a DECnet installation.

**7 The next prompt concerns the IVP (Installation Verification Program):**

```
* Do you want to run the IVP after the
installation [YES]?'
```

Press Enter if you want to run the IVP after installation; type N if you do not.

Selecting the IVP option generates a PostScript print job, once installation is completed, that verifies your installation.

» **Note:** *The ' symbol indicates that on-line help is available. To get help, type ? at the prompt and press Enter.*

**8 You're now asked if you want to purge existing files that are replaced by this software installation:**

```
* Do you want to purge files replaced by this
installation [YES]?'
```

Type Y to purge older versions of files after installation.

**9 You're prompted for the name of the product you want to install:**

```
* Which product is to be installed [QMS-3825]?
```

Enter ? for a list of QMS printer names.

**10 The next prompt concerns the PS Executive Series Utilities (Remote Console) for VMS:**

```
* Do you wish to install the printer management
software, PS Executive [YES]?
```

## Entering the Printer Node Name and Address

Use either the Phase V or Phase IV instructions that follow, depending on your site.

### Phase V Only:

```
Successful installation of this product under
DECnet-OSI (Phase V) requires that you have
already defined a node name and address to be
used with the printer you are installing. (The
Installation Verification Procedure will fail
otherwise.) You will be asked for the node name
later in this installation procedure.

If you have not already done so, you should make
sure that the DECnet address entered at the
printer control panel matches the address for
the printer's node name as defined on the host.
Consult your printer user's manual for
information on setting control panel options.

The printer address has been set [YES]?
```

The program next prompts you for the printer node name:

```
* Enter a node name for the QMS printer:
```

Enter the node name of the QMS printer you're updating.

» **Note:** *Be careful not to end the node name with a single colon (:). Otherwise, the symbiont will assume a port connection.*

Once you've specified a node name, the program asks you to verify your selection:

```
* Accept name node_name?
```

Press Enter if the displayed *node_name* is correct. If you want to change it, type `N`.

## Phase IV Only:

Phase IV installation continues with the following steps to enter the printer node name and address.

**1 The program next prompts you for the printer node name:**

```
* Enter a node name for the QMS printer:
```

Enter the node name of the QMS printer you're updating.

» **Note:** *Be careful not to end the node name with a single colon (:). Otherwise, the symbiont will assume a port connection.*

**2 The program next prompts you for the printer node address:**

```
* Enter an address for the QMS printer:
```

Enter the address of the QMS printer you're updating.

**3 Once you have specified a node name and address, the program asks you to verify your selections:**

```
* Accept name node_name and address address?
```

Press Enter if the displayed *node_name* and *address* are correct. If you want to change them, type N.

**4 If you want to reallocate the node name and/or address to the printer being installed, type Y at the next two prompts:**

```
* node_name already exists, use it anyway [NO]?
```

If the node address specified is found in either of the volatile or permanent databases, the following prompt displays:

```
* address already exists, use it anyway [NO]?
```

**5 Once you've specified the node name and address, the installation program checks them against the network control database. If the name and address are valid, the program displays**

```
* The printer address has been set to address'
```

## Naming the Queues

The installation continues for both Phase IV and Phase V software with the following steps to name the execution queue.

**1 You're next prompted for the name of the execution queue.**

» **Note:** *If this is a system update and the target queue exists, then that queue must be stopped and deleted from the active system.*

```
* Enter a name for the QMS printer's execution
queue [QMS_nodename]:
```

Enter the name of the execution queue associated with the QMS printer you're updating. If this queue name exists, the program displays the following prompt:

```
* The execution queue queue_name exists, replace
it [YES]?
```

Type `N` to keep the existing queue name.

**2 If a queue start-up file exists, the program displays the prompt:**

```
* An existing queue start-up file was found,
replace it [YES]?
```

Type `N` to append new queue to the existing queue start-up file. Type `Y` to install a new version of the QMS$START_-QUEUE.COM file. Your existing start-up file is renamed to QMS$START_QUEUE.OLD.

## Creating Generic Queues

The installation continues with the following steps to create generic queues for the emulations.

1 **The program asks if you want to create generic queues for each emulation supported by the printer:**

```
* Do you wish to create generic queues [YES]?'
```

If this is a software update, type N to allow the previously created queues to be used.

If this is a first time installation and you want to take advantage of VMS queue load balancing and QMS print symbiont data typing, type Y.

Data typing allows the symbiont to generate the appropriate DOC commands which select the emulation to be used for processing the print job.

2 **Next, the program displays the following message and continues installing the software:**

```
* All required user input is complete!
Installation continues...

Files are now being moved to their target
directories...
```

3 **When the software installation is successfully completed, the program displays the following message and then returns the system prompt:**

```
%QMSSMBPSE-I-CLEANUP, Exiting, VMSINSTAL
cleaning up...
```

» **Note:** *If the Installation Verification Program was selected earlier in the install, the IVP test file prints at this point.*

# After Installing the Host Software

After host software installation, ensure that the system boot file calls the printer start-up file. For example, for VMS Version 5 systems, the SYS$SYSROOT: SYSTARTUP_V5.COM file should include this line:

```
$ @SYS$STARTUP:QMS$START_QUEUE.COM
```

If the printer is part of a VAXcluster system, ensure that all other members of the cluster include the call to the QMS$START_QUEUE.COM in their start-up files. For VMS systems, include this line in each member's start-up file:

```
$ @SYS$COMMON:[SYS$STARTUP]QMS$START_QUEUE.COM
```

» **Note:** *If you saved predefined set-up files by moving them from the old device control library during the software update, you must be sure to move them back to the QMS$DEVCTL20.TLB library using the following commands:*

```
$ library/insert/text -↵
_$ SYS$LIBRARY:QMS$DEVCTL20.TLB -↵
_$ module_name.tmp↵
```

A Device Control Library update utility has been provided in the sys$common:[sysmgr] directory. To run this procedure, type

```
$ @sys$common:[sysexe]qms$update_lib↵
```

» **Note:** *This procedure provides a user-friendly method of copying library modules from one Device Control Library to another. Additional information is displayed to the user when this procedure is run.*

See chapter 5, “Printing Your Files,” for more information about set-up modules.

# HSL Network Application

Activating the Hot Status Listener (HSL) application provides the host with pseudo real-time printer message logging. The HSL receives printer error and backchannel messages from DECnet-connected printers. The HSL can then relay the message to OPCOM, a terminal port, or to a log file in the original directory.

The HSL logs error status and backchannel messages to the print file's directory under the *print_file_name.*LOG file when you're using LN03 Plus or PostScript emulation if the appropriate command line options were specified.

Whenever a printer error (such as media jam or paper out) occurs, a message is sent to the operator console. Use the following command if you want to prevent these messages from appearing on the console:

```
$ RELAY/DISABLE = PRINTER
```

This application also relays backchannel messages from user jobs to the user. Refer to "Logging Backchannel Messages" in chapter 4, "Queues, /PARAMETERS, and Logicals," for additional information.

## Enabling the HSL

Activating the HSL application is a two-step procedure with special instructions given below for Phase V installations.

1 **Enable the DECnet HSL option from the printer control panel (Administration/Emulations/DECnet-TCP/IP/DECnet HSL menu).**

See the printer user's guide for instructions on navigating the Configuration menu.

**2 Type the following commands:**

```
$ SET DEF SYS$COMMON:[sysexe]↵
$ @qms$inithsl↵
```

» **Note:** *This command procedure works without modification for most sites but you should review the command procedure before running.*

Once these two steps are completed, the HSL application is active and ready to receive printer error and backchannel messages.

## Phase V Installation

The HSL installation routine checks for DECnet Phase V. If Phase V is detected, NCL creates the HSL session control application on the running system. The NCL command procedures used by the system at start-up to configure the network are appended with the necessary information for generating the HSL application at system start-up time.

Phase V HSL installation prompts are as follows:

```
Checking NCL for the existence of the session
control application HSL
```

If HSL has already been installed, you'll see this message:

```
The session control application HSL is already
defined!
```

If HSL has not been previously installed, you'll see this message:

```
Creating the session control application HSL
```

## Verifying the HSL Application

To verify that the HSL application is running, enter the appropriate command:

### Phase IV

```
$ mc ncp show object HSL↵
```

The following information is displayed on a DECNet host

```
Object  Number  File/PID                  User ID    Password
HSL     0       SYS$COMMON:[SYSEXE]HSL.EXE 00000154   HSLHSLHSL
```

### Phase V

```
$ mc ncl show session control application HSL↵
```

» **Note:** *To prevent the creation of a log file, delete the directory SYS$SPECIFIC:[HSL]. By default, VMS creates a NETSERVER.LOG file in this directory for each connection to the HSL application. Deleting the [HSL] directory prevents this log file from accumulating.*

# PS Executive Series Utilities (Remote Console)

PS Executive Series Utilities gives you an easy way to

- Access printer features and settings through the optional remote console
- View printer data
- Set and show printer locations

## Navigating through PS Executive

Use the Up or Down arrow keys to highlight the menu item you want to select, and press Return.

## Starting PS Executive for VMS

PS Executive is installed as part of the host software installation. Once the software is installed, PS Executive can be started with the following command:

```
$ run sys$system:qms$psexec↵
```

You're asked for the printer node name:

```
* What is the QMS printer node name
```

Enter the node name for the printer whose settings you want to view. This node name was assigned to the printer by the system administrator during the host software installation.

You may view the settings on only one QMS printer at a time. However, up to four users may view the same printer at the same time. If you have other printers connected to the host, you must exit PS Executive before viewing others.

## Printer Default Settings

Your system administrator established various printer default settings at installation. These default settings are stored in printer memory and become effective whenever the printer is turned on. Since these settings affect the way the printer receives, processes, and prints your files, the settings are important to you. With PS Executive, you can look at these settings without leaving your desk.

After starting PS Executive, press Return to display the title screen.

## Start Remote Console Session

See your *Remote Console User's Guide* for further instructions.

## Show Printer Counters

The printer keeps track of the amount of data received and other accounting information. These printer “counters” are

- **Bytes Received**

  Displays the total number of data bytes received by the printer since it was turned on.

- **Messages Received**

  Displays the total number of messages received from the host since the printer was turned on.

- **Bytes Sent**

  Displays the total number of bytes sent to the host by the printer (usually in response to a host request for status) since the printer was turned on.

- **Messages Sent**

  Displays the total number of messages sent to the host by the printer since it was turned on.

- **Jobs Printed**

  Displays the total number of print jobs processed by the DECnet interface since the printer was turned on.

## Identifying the Printer Location

### Set Printer Location

Use this menu option to enter the printer location as a string of up to 60 characters. This is the printer location that is displayed by Show Printer Location. If you access this option but decide to keep the current setting, press Return.

### Show Printer Location

This menu option displays the string that was entered by Set Printer Location. If no location has been set, the following message displays:

```
Use Set Printer Location first
```

The printer location is stored in file

```
SYS$COMMON:[sysexe]QMS$node_name.dat
```

where *node_name* is the printer node name.

## Exit PS Executive

To exit from PS Executive, highlight this option and press Return. You're returned to the system prompt.

❖

# 3

# Serial/Parallel Host Software Installation

## In This Chapter . . .

- Terminal characteristics
- Installing serial/parallel host software
- Post-installation information

# Introduction

This chapter takes you step-by-step through the installation of the QMS host software for host-, LAT-, or serial/parallel-connected printers.

# Before You Begin

Before installing the host software, ensure that the designated system port is identified and properly configured for the target printer port to be used.

## If This is an Update

If you're updating your host software from a previous version and you want to save predefined set-up files, move them from the old device control library at this time. To do this, use the following commands:

```
$ library/extract=module_name -$ _$
SYS$LIBRARY:QMS$DEVCTL20.TLB -
_$/OUT=module_name.tmp
```

A Device Control Library update utility has been provided in the sys$common:[sysmgr] directory. To run this procedure, type:

```
$ @sys$common:[sysexe]qms$update_lib
```

» **Note:** *This procedure provides a user-friendly method of copying library modules from one Device Control Library to another. Additional information is displayed when this procedure is run.*

# Terminal Characteristics

The software installation assigns the following terminal characteristics to the printer port:

| | | | |
|---|---|---|---|
| Interactive | No Echo | No Type_ahead | No Escape |
| No Hostsync | TTSync | Lowercase | No Tab |
| No Wrap | Scope | No Remote | Eightbit |
| No Broadcast | No Readsync | NoForm | Fulldup |
| No Modem | No Local_echo | No Autobaud | Hangup |
| No Brdcstmbx | No DMA | No Altypeahd | Set_speed |
| Line Editing | Overstrike Editing | No Fallback | No Dialup |
| No Secure server | No Disconnect | Passthru | No Syspassword |
| No SIXEL Graphics | No Soft Characters | No Printer Port | Numeric Keypad |
| No ANSI_CRT | No Regis | No Block_mode | No Adv_video |
| No Edit_mode | No DEC_CRT | No DEC_CRT2 | No DEC_CRT3 |
| No DEC_CRT4 | | | |

# Installing the DECnet Host Software

Use the following procedure to install the serial/parallel host software:

1 **After mounting the host software media on the input device and logging in under the system account, begin the installation program by typing**

```
$ @SYS$UPDATE:VMSINSTAL↵
```

2 **After the installation program banner, the following prompt displays:**

```
* Are you satisfied with the backup of your
system disk?
```

- If you're satisfied with your back-up copy of the system disk, type `Y` or press Enter.

  The system notifies you that it is moving the release notes to the system help directory.

- If you don't made a back-up copy, type `N` to exit from the program.

**3 The installation program prompts you for the name of the device where you mounted the software tape:**

```
* Where will the distribution volumes be
mounted:
```

Type the device name and press Enter.

**4 The program next prompts you for the name of the save set:**

```
* Enter the products to be processed from the
first distribution volume set.

* Products:
```

Type the product name from the distribution software tape label and press Enter.

The name has the format QMSSMBPSE*xxx* where *xxx* is the version of the software. For example, type QMSSMBPSE030 if you're installing Version 3.0.

**5 The next prompt asks for any installation options you want to use during installation of the software:**

```
* Enter installation options you wish to use
[NONE]:
```

- If you don't want to use any options, press Enter.
- If you want to create a .LOG file on the host containing all prompts from the installation, type L and press Enter.
- Other options you may use are documented with the VMSINSTAL program in your VMS manuals.

This message displays:

```
* The following products will be processed:

  QMSSMBPSE V3.x

%VMSINSTAL-I-RESTORE, Restoring product save set A ...
%VMSINSTAL-I-REMOVED, The product's release notes
have been successfully moved to SYS$HELP.
```

**6 You're now asked whether you're installing a DECnet or a serial/parallel symbiont:**

```
* Configure host software for a serial/parallel
interface (rather than a DECnet) [NO]?
```

Type Y and press Enter

Refer to the Version 3.x Release Notes, located in the SYS$HELP directory, for information on configuring the host software for other/additional interfaces.

**7 The next prompt concerns the IVP (Installation Verification Program). The IVP is a single test print job that verifies software installation and network connectivity of the printer at the end of the installation process.**

```
* Do you want to run the IVP after the
installation [YES]?
```

- Type Y to queue a test file to be printed following the installation.
- Type N if you don't want to print the test file.

```
* Do you want to purge files replaced by this
installation [YES]?
```

- Type Y if you want all files from the previous installation deleted.
- Type N if you want files from previous installation left on the disk.

**8 You're now prompted to enter the name of the product you wish to install:**

```
* Which product is to be installed [QMS-3825]?
```

**9 You're now asked for a terminal port:**

```
* Enter a terminal port for the QMS PS-product_name
printer:
```

This port is assigned to the product you're installing. The name can have up to seven characters. Don't include the colon (:) after the terminal port.

- If the port is found, the following prompt displays:

  ```
  * The port was found and the desired
  characteristics have been set.
  ```

- If the port was not found, the following prompt displays:

  ```
  * The port does not exist or has already been
  allocated to another user. Please enter
  another port for the printer.
  ```

  You're again prompted to enter the terminal port name.

**10 You're now asked if the printer supports QMS Document Option Commands.**

Refer to your printer user's guide to determine if the printer supports DOC commands.

```
* Does this printer support Document Option
Commands (DOC)? [YES]:
```

Type `Y` or `N`.

**11 If you answered Y, the following prompt displays:**

```
* Will you be using the parallel interface?
[NO]:
```

- Type `N` if this installation is for a serial terminal port.
- Type `Y` if this installation is for a parallel terminal port.

» **Note:** *If you're using the parallel interface and are installing the printer on a Dataproducts parallel interface, see your QMS printer user's guide for support of Dataproducts parallel communication.*

## Naming the Queues

The installation continues with the following steps to name the execution queue.

1 **The program next prompts you for the name of the execution queue. You may choose the default name "QMS" by pressing the Return key, or choose a queue name by entering a unique name.**

```
* Enter a name for the QMS printer's execution
queue [QMS_nodename]:'
```

» **Note:** *_nodename is a name assigned automatically by the system administrator.*

2 **Enter the name of the execution queue associated with the QMS printer.**

If this name is an existing queue name, the program displays the following prompt:

```
The execution queue queue_name exists, replace
it [YES]'
```

Type N to keep the existing queue name.

## Creating Generic Queues

The installation continues with the following steps to create generic queues for the emulation languages.

1 **The program asks if you want to create generic queues for each language supported by the printer:**

```
* Do you wish to create generic queues [YES]?'
```

- If this is a software update, type N to allow the previously created queues to be used.

- If this is a first-time installation and you want to take advantage of VMS queue load balancing and QMS print symbiont data typing, type Y. Data typing allows the symbiont to generate the appropriate DOCs to select the language to be used for processing the print job.

**2 If a queue start-up file exists, the program displays the prompt:**

```
* An existing queue start-up file was found,
replace it [YES]?
```

- Type N to append this queue to the bottom of the existing queue start-up file.
- Type Y if you want to install a new version of the QMS$START_QUEUE.COM file. Your existing start-up file is renamed to QMS$START_QUEUE.OLD.

**3 Next, the program displays the following message and continues installing the software:**

```
* All required user input is complete!
Installation continues...
```

**4 When the software installation is successfully completed, the program displays the following message and returns the system prompt:**

```
%QMSSMBPSE-I-CLEANUP, Exiting, VMSINSTAL
cleaning up...

Files are now being moved to their target
directories...
```

## Defining Queue Logicals for Serial/Parallel

If your QMS printer doesn't support QMS Document Option Commands (DOC), the following logical was defined by the installation:

```
$DEFINE/SYSTEM QMS$execution_queue_CONTROL -"NODOC"
```

```
If you selected a parallel interface, the following
logical was defined:
```

```
$DEFINE/SYSTEM QMS$execution_queue_CONTROL -"PARALLEL"
```

*execution_queue* is replaced with the name of your execution queue.

The execution queue outputs directly to the printer. Jobs which appear in the execution queue are directed to the printer by the print symbiont.

To specify that the banner pages are to be pulled from a specific input bin or tray, define the following logical:

```
$ DEFINE/SYSTEM QMS$execution_queue_CONTROL -
_$"INPUT=tray_name"
```

Refer to the characteristic file for the available bin or tray selections for your printer.

» **Note:** *If the Installation Verification Program was selected earlier in the install, the IVP test file prints at this point.*

# After Installing Software

After you've installed the software, ensure that the system boot file calls the printer start-up file. For example, for VMS Version 5 systems, the SYS$SYSROOT: SYSTARTUP_V5.COM file should include this line:

```
$ @SYS$STARTUP:QMS$START_QUEUE.COM
```

If the printer is part of a VAXcluster system, ensure that all other members of the cluster include the call to the

QMS$START_QUEUE.COM in their start-up files. For VMS systems, include this line in each members start-up file:

```
$ @SYS$COMMON:[SYS$STARTUP]QMS$START_QUEUE.COM
```

» **Note:** *If you saved predefined set-up files by moving them from the old device control library during the software update, you must be sure to move them back to the QMS$DEVCTL20.TLB library using the following commands:*

```
$ library/insert/text -
_$SYS$LIBRARY:QMS$DEVCTL20.TLB -
_$ module_name.tmp
```

See chapter 5, “Printing Your Files,” for more information about set-up modules.

Refer to the Version 3.x Release Notes for information on configuring the host software for other/additional interfaces.

❖

# 4

# Queues, /PARAMETERS, and Logicals

## In This Chapter . . .

- Order of precedence
- Defining command line, queue logicals, and queue name
- Creating your own generic queues
- Using execution and generic queues
- Managing queues
- Information about characteristic files

# Order of Precedence

The following information provides the order of precedence for controlling printer output.

The /PARAMETER qualifiers can be used on the command line or transparently through a logical definition which is associated with a specific queue.Whether the /PARAMETER qualifier is given on the command line or logical will determine which takes precedence.

The /PARAMETER locations have the following order of precedence:

- Command line /PARAMETERS
- The queue logical definition
- A queue name that implies its data type

## Command Line Precedence

Specifying a /PARAMETER on the command line has the highest precedence. For example,

```
$ PRINT/QUEUE=MYQUEUE -
_$ /PARAMETER=DATA_TYPE=postscript -
_$ filename.ext
```

### Command Line Changes

If you want to print a job that uses the PostScript language and legal paper, type the following command at the system prompt:

```
$ PRINT/QUEUE=PSLEGAL_PUBS filename
  /PARAM=SHEET_SIZE=LEGAL
```

The *filename* is the name of the job or file you want to print. But if you want the job to use other printer features, you must specify them on the command line. For example, if you want the job printed in duplex mode, type

```
$ PRINT/QUEUE=PSLEGAL_PUBS/PARAMETER=SIDES= -
_$ TWO filename
```

You may use any of the PRINT parameters explained in this chapter. Any parameter that you express on the command line takes precedence over the same parameter specified in the generic queue definition.

## Queue Logical Precedence

Unique document handling features of the Crown printers are controlled using QMS Document Option Commands (DOC). These commands are prepended to the print job by the print symbiont. Creating a queue logical, which causes DOCs to be generated for all files printed through that queue, provides the second highest order of precedence. This example creates the following logical for the queue MYQUEUE:

```
$ DEFINE/SYSTEM QMS$MYQUEUE_QUEUE -
_$ "DATA_TYPE=post"
```

All files printed through MYQUEUE are automatically preceded with DOCs which instruct the printer to route this job to the PostScript language interpreter.

If the DATA_TYPE parameter is also given on the command line, it takes precedence over the DATA_TYPE given by the queue logical.

### The Queue Logical Definition

Use the following queue logical to associate up to 20 parameters with any queue. By using this logical, you can transparently append PRINT parameters to existing generic queues.

```
$ DEFINE/SYSTEM QMS$queue_name_QUEUE -
_$ parameter,parameter,...
```

However, queue logicals take precedence over implied data types based on generic queue names.

For example, the following command issued from the command line associates the SIDES parameter with the PSLEGAL_PUBS generic queue:

```
$ DEFINE/SYSTEM QMS$PSLEGAL_PUBS_QUEUE -
_$ "SIDES=TWO"
```

Whenever a job is sent to the PSLEGAL_PUBS queue, the job controller adds the SIDES=TWO parameter to the existing parameters (defined in the generic queue) that apply to all jobs sent to the queue.

Changing parameters in logicals is also done from the command line. For example, to change the SIDES parameter from TWO to TUMBLE, use the following command:

```
$ DEFINE/SYSTEM QMS$PSLEGAL_PUBS_QUEUE -
_$ SIDES=TUMBLE
```

All logicals are stored in the SYSTEM table. To view a list of all logicals that you have associated with the QMS printer, use the following command:

```
$ SHOW LOGICAL QMS*
```

To remove a logical list, use the DEASSIGN command:

```
$ DEASSIGN/SYSTEM QMS$queue_name_QUEUE
```

## Queue Names (Implied Data Type) Precedence

Beginning queue names with keywords that specify the data type has the lowest precedence. The following is a list of keywords and the emulation/language they imply:

| Keyword | Emulation |
|---|---|
| POS | PostScript |
| PS | PostScript |
| LN0 | LN03 Plus |
| ANS | LN03 Plus |

| Keyword | Emulation |
|---|---|
| HP-P | HP PCL *x* |
| HPP | HP PCL *x* |
| HP-G | HP-GL |
| HPG | HP-GL |
| CCI | CCITT |
| QUIC | QMS QUIC II |
| LP | Lineprinter |
| LINEP | Lineprinter |

For example, the following queue names carry with them the indicated data types, forcing DOCs to precede jobs printed through them:

| | |
|---|---|
| PS_QUEUE1 | PostScript |
| POSITRON_FAST | PostScript |
| ANSWER2 | LN03 Plus |
| LN03+_QUEUE | LN03 Plus |

Implied data types can be overridden by either a queue logical or a data type argument on the command line.

## Example

**1 A queue exists with the name *myqueue* (user queue name).**

**2 A logical is defined by the command**

```
$ DEFINE/SYSTEM QMS$myqueue_QUEUE -
_$" input=top,data_type=LN03"
```

3 **The following command is entered to print a file:**

```
$ PRINT/QUEUE=MYQUEUE -
_$ /PARAMETER=DATA_TYPE=HPGL filename.ext
```

The symbiont precedes this print job with DOCs that direct it to the HP-GL emulation.

» **Note:** *The /PARAMETER qualifier DATA_TYPE is a special case. All other /PARAMETER qualifiers can be declared only through the queue logical or on the command line. However, the order of precedence is the same as that explained above.*

# Using Queues

A print queue is a list of jobs in the host queue waiting for the printer. On VMS systems, there is an execution queue that is most closely associated with the printer and up to eight generic queues per execution queue. The QMS host software installation automatically creates an execution queue for your printer. Additionally, you may have chosen to create one generic queue for each emulation supported by the printer. You may attach default printing parameters to these generic queues (as you'll learn in this chapter) to include instructions for accessing printer features, such as duplex printing or drawing paper from a specific input cassette, tray, or bin.

The information in this chapter will help you use the execution and generic queues to take advantage of the printer's many features. You may access most of the features through command line parameters, but generic queues help users print more efficiently.

## Queue Characteristics

You may establish as many queues for your printer as you want with as many different combinations of printer features (VMS allows up to eight generic queues to reference an execution queue).

## Creating Generic Queues

Define the generic queues by using the following commands in the QMS$START_QUEUE.COM file:

```
$ INIT/QUEUE/START -
_$ /GENERIC=(exec_queue1, exec_queue2, -
_$ exec_queue3) generic_queue_name
$ DEFINE/SYSTEM QMS$queue_name_QUEUE -
_$ "parameters,parameters,..."
```

In this syntax, *exec_queue1*, *exec_queue2*, and *exec_queue3* are the execution queues with which the generic queue *generic_queue_name* is associated. If you have more than one printer, any generic queue you create that points to more than one execution queue allows the job controller to perform load balancing. This means that jobs get distributed equally among all printers on that queue. The third line defines the generic queue's name.

The fourth line illustrates the creation of a logical showing the PRINT parameters to be used with every job sent to this generic queue. This logical specifies which DOCs are to be appended to the print job. These parameters are the instructions used by the symbiont to access the document handling features of the printer for the job. Each parameter must be enclosed in quotes and separated by commas **only.** Don't use spaces or parentheses to separate parameters.

» **Note:** *The QMS$START_QUEUE.COM file contains commented samples of logical definitions that you may use.*

### Example of Parameters Used with a Generic Queue

The following example sets up a generic queue (named PSLEGAL_PUBS) for PostScript language files on legal-size (8.5" x 14") paper. The generic queue points to the execution queue QMS_PUBS. (The dashes at the end of lines indicate continuation to the next line.)

```
$ INIT/QUEUE/START/GENERIC=(QMS_PUBS) -
_$ PSLEGAL_PUBS
$ DEFINE/SYSTEM/EXECUTIVE -
```

```
_$ QMS$PSLEGAL_PUBS_QUEUE -
_$ "DATA_TYPE=POSTSCRIPT,SHEET_SIZE=LEGAL"
```

Any job sent to the PSLEGAL_PUBS queue receives the PRINT parameters DATA_TYPE=POSTSCRIPT and SHEET_ SIZE=LEGAL. The print symbiont translates these parameters into QMS DOCs and sends the job to the printer that is associated with the QMS_PUBS execution queue.

# Execution and Generic Queues

When a node sends a job to the printer via a generic queue, the job controller places the job in the generic queue and monitors the status of the associated execution queue. If the execution queue is busy, the job controller waits until it's idle and then moves the job to the queue and alerts the print symbiont. The symbiont adds the necessary printer information to the job (based on how the user specified the PRINT parameters) and sends the job to the printer.

# Managing Queues

QMS Crown printers equipped with internal hard disks spool all print jobs to this hard disk, making most queue management commands associated with host-based spooling unnecessary for day-to-day operation of the printer. (Some spooling is handled in RAM for those printers without an internal hard disk.) If you check the printer queues with the SHOW QUEUE command, you may find that no jobs are listed in the queue although the printer is printing and processing several jobs. The jobs are spooled to the printer's internal print queueing system.

The Administration/Emulations/DECnet-TCP/IP/Spooling menu controls spooling. If it is set to On Idle, DECnet print jobs are accepted only if the printer is idle. If it is set to On, DECnet print jobs are accepted as long as there is spool space on the printer. If it is set to On

Input Idle, DECnet print jobs are accepted only if the printer has completed the processing for the previous job and has begun to print it.

You can delete the current job from the internal print queue by using the Cancel (or Reset) key on the printer control panel. Refer to your printer user's guide for information on using the Cancel (or Reset) key.

# Merging Queues

If you have more than one QMS printer connected to the host, you can merge execution queues in the event one printer experiences problems. The following commands stop the queue associated with the stalled printer (QMS_PUBS) and merge it with a different queue (QMS_MKTG) associated with a similar printer:

```
$ STOP/QUEUE/REQUEUE=QMS_PUBS QMS_MKTG
$ ASSIGN/MERGE QMS_PUBS QMS_MKTG
```

# QMS VMS-Supported Parameters

» **Note:** *Not all parameters are supported on all printers. For the /PARAMETER commands that are valid for your printer, see your product-specific on-line help and characteristic file (SYS$COMMON:[SYSEXE]QMS$product_CHAR.DAT).*

If you use parameters in your generic queue definition, they override any corresponding settings in the printer's configuration menu. **However, any of these parameters included with the PRINT command from the system prompt override the corresponding parameters in the generic queue definition.**

» **Note:** *These same commands may be supplied to the queue logical (using DOCs) supplying the generic queue definitions.*

The following parameters are supported:

| | |
|---|---|
| COLLATE | PAGE_GRID |
| BOOK_STYLE | PAGE_LAYOUT |
| DATA_TYPE | PAGE_LIMIT |
| DOC | PAGE_MARGIN |
| INPUT | PAGE_OFFSET |
| MESSAGES | PAGE_SCALING |
| OFFSET/JOGGING | SHEET_COUNT |
| ORIENTATION | PAGE_SCALINGSHEET_SIZE/PAGE_SIZE |
| OUTPUT | SIDES |
| OVERLAY | STAPLE |
| PAGE_BORDER | |

### BOOK_STYLE

The BOOK_STYLE parameter places two logical pages on each sheet (or face) in an order that produces a booklet when the paper is folded. The booklet can be read by turning pages from right to left or flipped from bottom to top as if it were a notepad. Check your user's guide to determine if your printer supports this parameter.

### COLLATE

The COLLATE parameter may be used if your printer supports collation. This parameter may be specified as on or off. Use the following command to select this option:

```
$ PRINT/QUE=quename/PARAMETERS=(COLLATE=selection) -
_$ filename.ext
```

» **Note:** *The COLLATE parameter must be specified as on for STAPLE to work. Stapling is defined for collation ranges. Turning collation off prevents the symbiont from defining the required collation ranges.*

## DATA_TYPE

The language of a file is its DATA_TYPE. If you use generic queues that specify a DATA_TYPE, you should send your files to the queues that correspond with the language/emulation you want the printer to use.

Include the DATA_TYPE parameter in your generic queue definition to specify which printer emulation to use for print jobs sent to the queue.

If the queue to which you send your files doesn't specify a DATA_TYPE, you can do so by using DATA_TYPE=*parameter* at the command line. The valid data types are the languages/emulations supported by your printer. For most printers, these are

- POSTSCRIPT for PostScript language files
- HPPCL for HP PCL (LaserJet emulation) files
- HPGL for HP-GL (HP plotter emulation) files
- LN03 for DEC LN03 Plus laser printer emulation files
- CCITT for files using CCITT Group 3 and 4 data compression (such as fax transmissions)
- QUIC for QMS QUIC II language files
- Lineprinter for Lineprinter files

» **Note:** *A subset or superset of these emulations may be available on your printer.*

The following example specifies PostScript as the printer language:

```
/PARAMETER=DATA_TYPE=POSTSCRIPT
```

If a generic queue includes this parameter and a print job sent to the queue doesn't specify a language with the PRINT command, the printer uses PostScript when printing the job.

### DOC

Some QMS printers don't support QMS Document Option Commands (DOC). The symbiont generates DOCs to access most printer features. Refer to your printer user's guide to determine if your printer supports DOC. You may force the omission of DOCs that are generated by the symbiont by entering the following command:

```
$ PRINT/PARAMETER=DOC=OFF/QUEUE=queue_name -
_$filename
```

Specifying DOC=ON has the same effect as omitting this command.

### INPUT

Include the INPUT parameter in your generic queue definition to specify the input tray, cassette, or bin to use for jobs sent to the queue. The arguments for INPUT are product dependent, and you should refer to your product's on-line help for valid values. Refer to the printer user's guide for a complete list and location of the input trays, cassettes, and bins.

The following example specifies the tray, cassette, or bin identified as TOP:

```
/PARAMETER=INPUT=TOP
```

If a generic queue includes this parameter and a print job sent to the queue doesn't specify an input tray or bin with the PRINT command, the printer draws paper from the top tray or bin when printing the job.

If a generic queue doesn't include this parameter, you may specify INPUT at the command line as follows:

```
$ PRINT/PARAMETERS=(INPUT=selection)
```

» **Note:** *If you are not sure of the contents of the input bins, use the SHEET_SIZE parameter.*

### MESSAGES

Include the MESSAGES parameter in your generic queue definition to obtain printer backchannel messages that occur during the processing and printing of the job.

» **Note:** *Only LN03 Plus and PostScript emulations on the QMS printer return backchannel messages to the printed error log page.*

The following example specifies that LN03 Plus error messages are printed on the error log (trailer) page after the job:

```
/PARAMETER=MESSAGES=PRINT
```

The following example returns job-related messages to the terminal:

```
/PARAMETER=MESSAGES=TERM
```

The following example logs all backchannel messages from the printer to a file having the file specification of the originally printed file. (For example, FILESPEC.LOG where FILESPEC is the path of the current file being printed):

```
/PARAMETER=MESSAGES=FILE
```

The following example sends backchannel messages to the terminal and to FILESPEC.LOG:

```
/PARAMETER=MESSAGES=BOTH
```

» **Note:** *The /PARAMETER messages of BOTH, TERM, and FILE have no effect unless the QMS$HSL network application is running. See chapter 2, "DECnet Host Software Installation," for more information about the HSL application.*

### OFFSET/JOGGING

Jogging, also called offset stacking, separates multiple copies of print jobs by offsetting alternating sets. If your printer supports the OFFSET parameter, valid values are off or on. Check your user's guide to determine where this command should be specified. This command causes both your data file and accompanying break pages to be offset from others' date files and break pages. Use the following command to offset your print jobs:

```
$ PRINT/QUE=quename/PARAMETERS=(OFFSET=selection) -
_$ filename.ext
```

» **Note:** *The OFFSET/JOGGING parameter must be specified as ON for offsetting to work. Turning offsetting off prevents the symbiont from defining the required offset ranges.*

### ORIENTATION

There are actually three parameters that control orientation. They are ORIENTATION, PAGE_ORIENTATION, and LPORIENTATION. If your application can't control page orientation, include an ORIENTATION parameter in your generic queue definition to specify either portrait or landscape orientation for jobs sent to the queue.

Use the ORIENTATION parameter to select orientation from the command line if your application doesn't support this option.

```
$ PRINT/PARAMETERS=(ORIENTATION=selection)-
_$ filename.ext
```

The *selection* may be either PORTRAIT or LANDSCAPE.

Most applications can change page orientation without using this parameter in the generic queue definition. Unless your application cannot change page orientation, you should use ORIENTATION=PORTRAIT or omit the parameter completely from the queue definition. The printer's default page orientation is portrait. The page orientation you select affects the positioning of duplex-printed pages. (See "SIDES," later in this chapter.)

### OUTPUT

Include the OUTPUT parameter in your generic queue definition to specify the paper output tray or bin to use for jobs sent to the queue. The values for OUTPUT are product dependent, and you should refer to your product's on-line help for valid arguments to this command. Refer to the printer user's guide for a complete list and location of the output trays or bins.

The following example specifies the tray identified as TOP:

```
/PARAMETER=OUTPUT=TOP
```

If a generic queue includes this parameter and a print job sent to the queue doesn't specify an output tray or bin with the PRINT command, the printer sends the printed page to the top output tray or bin when printing the job.

If a generic queue doesn't specify this parameter, you may include OUTPUT at the command line as follows:

```
$ PRINT/PARAMETERS=(OUTPUT=selection)
```

### OVERLAY

The OVERLAY parameter enables you to print an image as a background of your job. See your *Document Option Commands* manual for more information about this parameter.

### PAGE_BORDER

The PAGE_BORDER parameter enables you to print a border around the page margins of each logical page. See your *QMS Document Option Commands* manual for more information about this parameter.

### PAGE_GRID

The PAGE_GRID parameter allows multiple pages to be printed on a single sheet of paper. (This is also called N-UP or Number-Up printing.) The PAGE_GRID parameter determines the number of page spots per sheet and the order in which logical pages are placed within the spots. See your *QMS Document Option Commands* manual for more information about this parameter.

### PAGE_LAYOUT

The PAGE_LAYOUT parameter allows you to selectively reset individual formatting commands in subsequent subjobs. Valid values are off and on. The default value is off. Check your printer user's guide to determine if your printer supports this parameter.

### PAGE_LIMIT

The PAGE_LIMIT parameter provides a means of specifying a range of pages to be printed. The range indicates the first and last pages that are to be printed. Pages that come before the page identified as

starting the range are compiled but are not printed. Pages that come after the last page in the range are flushed without being compiled. The default range is one page.

### PAGE_MARGIN

The PAGE_MARGIN parameter defines the usable area of the sheet in which logical pages may be placed. The margins established by this parameter take effect after the sheet has been oriented by the ORIENTATION parameter.

### PAGE_OFFSET

The PAGE_OFFSET parameter is used to offset the logical page within its page spot. This parameter takes effect after the sheet has been oriented by the ORIENTATION parameter and after the page grid has been defined by the PAGE_GRID parameter. See your *QMS Document Option Commands* manual for more information about this parameter.

### PAGE_SCALING

The PAGE_SCALING parameter scales the logical page to fit within its page spot. The aspect ratio of the page is maintained during scaling, reducing or expanding the page's width and height in the same proportions. Valid values for this parameter are off and on. See your *QMS Document Option Commands* manual for more information about this parameter.

### SHEET_COUNT

You have three ways to print multiple copies of your files:

- The SHEET_COUNT parameter prints *n* uncollated copies of each page of every file in your job regardless of the collation setting in the printer's configuration menu. The range of values for SHEET_COUNT is 1 to 10,000.

  ```
  $ PRINT/PARAMETERS=(SHEET_COUNT=n) filename.typ
  ```

- The PRINT/COPIES command prints *n* collated copies of each file in your job regardless of the collation setting in the printer's configuration menu.

  ```
  $ PRINT/COPIES=n filename.typ
  ```

- The PRINT/JOB_COUNT command prints *n* collated copies of the entire job regardless of the collation setting in the printer's configuration menu.

  ```
  $ PRINT/JOB_COUNT=n filename.typ
  ```

## SHEET_SIZE

The sheet size is the physical size of the media on which you're printing. If you include the SHEET_SIZE parameter instead of the INPUT parameter in the queue definition, the printer attempts to find an input tray, cassette, or bin loaded with media that matches the SHEET_SIZE value specified. The values for SHEET_SIZE are given in your product's on-line help.

The following example specifies letter size:

```
/PARAMETER=SHEET_SIZE=LETTER
```

Refer to your printer user's guide for a list of its supported paper sizes. If you include both SHEET_SIZE and INPUT parameters in the queue definition, the value you specify for SHEET_SIZE must match the media loaded in the specified input tray, cassette, or bin. If it doesn't, some printers display an error message, stop processing your file, and wait for the correct media size to be loaded in the specified input tray, cassette, or bin. Other printers don't.

## SIDES

If your printer has a duplexer, you may print two-sided copies by using the following command:

```
$ PRINT/PARAMETERS=(SIDES=selection) -
_$ filename.ext
```

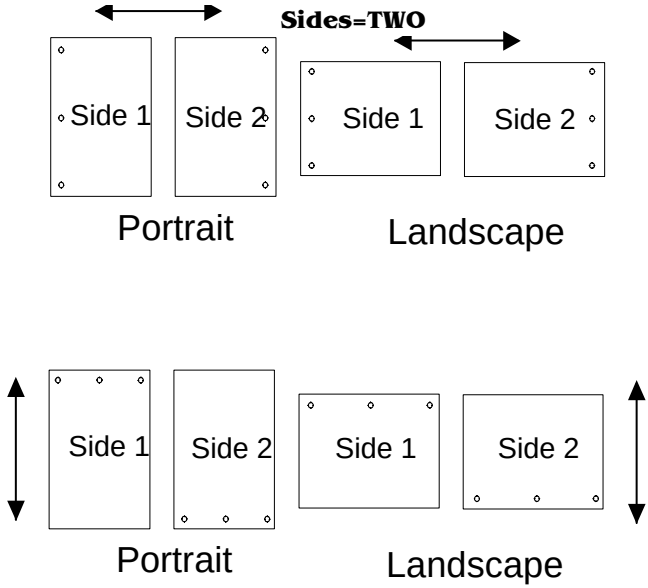
The acceptable values for *selection* are as follows:

| | |
|---|---|
| **ONE** | Single-sided copies, no duplexing. |

| | |
|---|---|
| **TWO** | Two-sided copies for binding along the left edge. |
| **TUMBLE** | Two-sided copies for binding along the top edge and with alternating pages rotated 180 degrees. |

» **Note:** *Other selections may be valid. Check your product-specific characteristic file.*

The following illustration shows the difference between SIDES=TWO and SIDES=TUMBLE.




**Sides=TUMBLE**

The following command prints duplex copies of the file MYFILE.PS:

```
$ PRINT/QUE=name/PARAMETERS=(SIDES=TWO)myfile.ps
```

### STAPLE

The STAPLE parameter may be used if your printer supports stapling. This parameter may be specified as on or off. Job, file flag, burst, and trailer pages are not stapled to your data pages if stapling is on. Use the following command to select stapling:

```
$ PRINT/QUE=name/PARAMETERS=(STAPLE=selection) -
_$ filename.ext
```

» **Note:** *The COLLATE parameter must be specified as on for STAPLE to work.*

# Characteristic File

The characteristic file initializes information used by the symbiont when parsing /PARAMETER qualifiers.

A characteristic file was installed during the VMSINSTAL procedure. This file has a name in the form:

```
QMS$product_name_CHAR.DAT
```

where *product_name* is the name of the product selected during the installation.

Because multiple QMS printers may be installed on a single VMS host, a logical is defined which specifies the characteristic file that is to be used by the queue with which it is associated. This logical takes the form QMS$*executionqueue_name*_CHAR where *executionqueue_name* is replaced by the name of the execution queue. For example, this logical is created by issuing the following command:

```
$ DEFINE/SYSTEM QMS$MYQUEUE_CHAR -
_$ "QMS$QMS-3825_CHAR.DAT"
```

Don’t modify the DATA_TYPE qualifier line or emulation selection may not work correctly when using DATA_TYPE. Other qualifiers, those occurring left of the first - character on each line, may be modified. However, don’t modify the DOC which is generated by the associated

qualifier - character. Lines which have a % character in column one are comment lines. When you enter the /PARAMETER qualifiers on the command line, they must contain at least as many characters as their counterparts in the characteristics file.

## Example

The following example characteristic file is used when you connect the symbiont to a QMS 4525 Crown printer.

```
% QMS-4525 Characteristic File
% DO NOT MODIFY THE FOLLOWING CHARACTERISTIC LINES!
% DATA_TYPE-emulation, CCITT-ccitt, HPPCL-pcl4,HPPCL-
PCL4,LINEPRINTER-lineprinter,R1-r1,IMPRESS-
impress,POSTSCRIPT-postscript,PS-postscript,LN03-
ln03+,ANSI-ln03+
STAPLE-staple,OFF-off,ON-on
%
% DO NOT MODIFY THE ABOVE CHARACTERISTIC LINES!
%
OUTPUT-output,11-11,12-12,13-13,14-14,15-15,16-16,17-
17,18-18,19-19,20-20,21-21,22-22,23-23,24-24,25-
25,26-26,27-27,28-28,29-29,30-30,31-31,32-32,33-
33,34-34,35-35,36-36,37-37,38-38,39-39,40-40,10-10,1-
1,2-2,3-3,4-4,5-5,6-6,7-7,8-8,9-9
INPUT-input,TOP-2,BOTTOM-1,MANUAL-0
SIDES-duplex,ONE-off,TWO-on,TUMBLE-tumble,1-off,2-
on,LETTERHEAD-letterhead
PAGE LIMIT-pagerange
ORIENTATION-orientation,PORTRAIT-Portrait,LANDSCAPE-
Landscape
PAGE ORIENTATION-pageorientation,PORTRAIT-
Portrait,LANDSCAPE-Landscape
SHEET COUNT-numcopies
SHEET SIZE-pagesize,LETTER-Letter,LEGALS-
LegalSmall,LEGAL-Legal,QUARTO-Quarto,COMMERCIAL-
Commercial,A4-A4,FOOLSCAP-foolscap,FOLIO-
FolioRCOLLATE-collate,OFF-off,ON-on
```

```
OFFSET-offset,OFF-off,ON-on
%
% The following characteristics are most often used
with number-up printing.
%
PAGE OFFSET-pageoffset
PAGE SIZE-pagesize,LETTER-Letter,LEGALS-
LegalSmall,LEGAL-Legal, QUARTO-Quarto,COMMERCIAL-
Commercial,A4-A4.FOOLSCAP-Foolscap,FOLIO-Folio
PAGE SCALING-pagescaling,OFF-off,ON-on
PAGE LAYOUT-newlayout,OFF-off,ON_COLLATE-on
collate,ON-on,COLLATE-collate
PAGE MARGINS-margins
PAGE GRID-pagegrid
PAGE BORDER-border
BOOK STYLE-booklet
OVERLAY-background
```

# Summary of Logicals

Five logicals are currently translated by the QMS symbiont:

- _CONTROL
- _CHAR
- _QUEUE
- _NUP
- _SETUP

The other VMS host software components, QMS PS Executive Series Utilities and HSL don't use logical translation strings.

Options within a logical string should be separated by commas. These five logicals, which are associated with an execution queue, require the execution queue to be stopped with a reset and restarted before redefinitions of those logicals will take effect.

## QMS$execution_queue_CONTROL

This logical is associated with the execution queue and relays options to the symbiont that modify its default behavior. These options include “PARALLEL,” “NODOC,” “CARRIAGE,” “SJS,” and “INPUT.”

- **PARALLEL**

  This option informs the symbiont that it’s connected to a parallel rather than a serial terminal port, thus preventing the symbiont from sending backchannel information back to the port.

- **NODOC**

  This option prevents the serial/parallel-configured symbiont from sending Document Option Commands (DOC) to the printer. This option should be set when using a printer that doesn’t support DOC.

  ```
  $ DEFINE/SYSTEM QMS$PS410_CONTROL -
  _$ "NODOC,CARRIAGE"
  ```

- **CARRIAGE**

  This option causes the symbiont to append normal carriage control characters around device control library module records. By default, the symbiont conforms to the DEC manner of not prepending carriage-control.

  ```
  $ DEFINE/SYSTEM QMS$PS410_CONTROL -
  _$ "NODOC,CARRIAGE"
  ```

- **SJS=SES or SJS=EDO**

  When SJS=SES is specified, the symbiont is forced to use the DOC **%%Session** for subjob delineation.

  When SJS=ED0 is specified, the symbiont is forced to use <ESC><DEL>0<CTRL-D> sub-job delineation.

  By default the symbiont will use the <ESC><DEL>0<CTRL-D> method unless the printer supports the **%%Session** method for subjob separation. In either case, this option permits a subjob separation method override capability.

```
$ DEFINE/SYSTEM QMS$queuename_CONTROL -
   _$ "CARRIAGE,INPUT=BOTTOM,SJS=SES"
```

A session is a single print job that encompasses two or more subjobs, and applies global printing attributes, such as duplexing and collating, to them. Each subjob can be of any supported emulation and can have its own printing attributes. See the *QMS Document Option Commands* manual and your printer user's guide for more information on the **%%Session** command.

- **INPUT**

  This option allows the specification for the tray from which all banner pages (flag, burst, and trailer) are to be drawn. A typical application would be for those users who want to use colored paper for these break pages.

## QMS$execution_queue_CHAR

This logical is associated with the execution queue and relays the name of the characteristic file which is to be used when determining what /PARAMETER commands are applicable for the printer attached to the execution queue.

```
$ DEFINE/SYSTEM QMS$QMS_4525_CHAR -
_$ "QMS$QMS-4525_CHAR.DAT"
```

## QMS$any_queue_QUEUE

This logical is associated with an execution or generic queue to allow a relatively permanent method of supplying /PARAMETER qualifiers for all jobs printed through the named queue without having to specify these /PARAMETER qualifiers with each print request.

These qualifiers are applied only if the print job is entered into the queue to which the logical is associated. If you specify /PARAMETER qualifiers with the print command, they will either override the logical definition (see "Order of Precedence" on page 4-2), or a union of the command line and logical parameters will be used. For example,

```
$ DEFINE/SYSTEM QMS$HPPCL_QMS860_QUEUE -
_$ "INPUT=TOP,SIDES=2"
```

or

```
$ DEFINE/SYSTEM QMS$QMS_4525_QUEUE -
_$ "STAPLE=ON,SIDES=2,INPUT=TOP,OUTPUT=20"
```

## QMS$any_queue_NUP

This logical is associated with the execution or generic queue to relay arguments to be used when printing PRTPOST type output. See chapter 5, “Printing Your Files,” for more information on PRTPOST output.

```
$ DEFINE/SYSTEM QMS$NUP_QMS_2025_NUP -
_$ "-L -C72 -n"
```

## QMS$any_queue_SETUP

This logical is associated with the execution or generic queue to relay the names of device control library modules that are to be printed first, followed by the files sent to the queue associated with this logical.

Like the _QUEUE logical, the command line /SETUP qualifier may be used resulting in a union of those modules specified by the logical and the command line sent to the printer before the file. For example,

```
$ DEFINE/SYSTEM QMS$PS410_SETUP -
_$ "MODULE1,MODULE2,MODULE3"
```

or

```
$ DEFINE/SYSTEM QMS$PS_QMS_2025_SETUP -
 _$ "CLEARANCE,SECURITY"
```

❖

# 5

# Printing Your Files

## In This Chapter . . .

- Accessing Your Printer Features
- Using the /SETUP and /FORM qualifiers
- prtpost - a PostScript Text Formatter

# Using Application Software

Most application or layered software products allow you to specify the queue in which to place jobs for printing. To set up your application for printing to the QMS printer, specify the generic queue that corresponds to your application's output language. For example, if your application outputs LN03 Plus commands, specify the generic queue (defined when you installed the host software) associated with the LN03 Plus language. You may also direct output to the execution queue, allowing the printer's ESP feature to select the language. For more information about printing, refer to your application's documentation.

# Printing from VMS

If you do not use an application to print, use the PRINT command and the queue name from the VMS command line:

```
$ PRINT/QUEUE=queue_name filename
```

You provide the *queue_name* that you want to use. The queue you specify may already have some qualifiers defined for it. These qualifiers access certain printer features. If you want to add qualifiers or change parameters from the command line, you can add your changes to the PRINT command with the /PARAMETERS qualifier.

The general format for adding qualifiers to the PRINT command is

```
$ PRINT/QUEUE=queue_name -
_$ /PARAM=(param,param...) filename.ext
```

Each parameter must be separated from the others by a comma **only**. Do not use spaces. The entire list of parameters you use must be enclosed in parentheses unless only one parameter is specified. See chapter 4, “Queues, /PARAMETERS, and Logicals,” for an explanation of the individual parameters. Set-up modules may also be used to specify print qualifiers for a specific queue as explained next.

# Using Set-up Modules, Forms, and Characteristics

Set-up modules are files that are written in a language that is understood by your printer. These files can serve many purposes, depending on your needs, from changing default fonts or page margins for a particular job, to printing a border or title on every page. Use the following command to print with a set-up module:

```
$ PRINT/SETUP=(mod1,mod2,...) filename.ext
```

The module names you provide must be in a library, and that library must be included in the execution queue definition.

A form may also include one or more set-up modules. Use the following command to print with a form:

```
$ PRINT/FORM=form_name filename.ext
```

You can assign each queue a different characteristic number. A characteristic can refer to a document handling or printer feature, such as a set-up module or a paper size, that the queue accesses. See chapter 4, “Queues, /PARAMETERS, and Logicals,” for information on assigning characteristics to queues. Use the following command to print using a characteristic:

```
$ PRINT/CHARACTERISTIC=n filename.ext
```

## Accessing Printer Features

Set-up modules can be associated with generic or execution queues so that you can access printer features. This allows you to write DOC or emulation-specific modules which are not normally accessible from within applications.

File set-up modules may be defined on the command line with

```
$ PRINT/SETUP=(module1,...)...
```

or by defining a logical associated with your queue in the form

```
$ DEFINE/SYS QMS$queue_name_SETUP m1,m2,...
```

Form set-up modules may also be defined in a form definition:

```
$ DEFINE/FORM/SETUP=(mod1,mod2,...) form_name-
_$ form_number
```

## Set-up Modules

If set-up modules are specified from the command line and a queue logical also defines a list of set-up modules, the modules specified on the command line are downloaded before those specified by the

```
QMS$queue_name_SETUP
```

logical where *queue_name* is the name of your specific execution queue. For example,

```
$ PRINT/QUEUE=my_queue "
_$ /SETUP=(setup_moda,setup_modb)"
_$ filename.ext
```

causes the symbiont to send set-up modules SETUP_MODA, SETUP_MODB, SETUP_MOD1, SETUP_MOD2, and so on, in that order before the file.

The following example of a PostScript language set-up file (BORDER.PS) draws a border around the page and prints CONFIDENTIAL at the top and bottom:

```
% Create border
/secrets matrix currntmatrix def
/oldshow /showpage load def
/showpage{
       gsave
       secrets setmatrix
       /Helvetica findfont 14 scalefont setfont
       252 756 moveto
       (Confidential) show
       252 22 moveto
       (Confidential) show
       clippath 10 setlinewideth .5 setgray stroke
       grestore

       oldshow
} def
```

# Forms

You may create the form either from the command line or by editing the QMS$START_QUEUE.COM file with the following command:

```
$ DEFINE/FORM form_name form_number -
_$ /DESCRIPTION= string -
_$ /SETUP=(mod1_name,mod2_name,...) -
_$ /LENGTH=nn -
_$ /WIDTH=nn -
_$ /PAGE_SETUP=(mod1_name,mod2_name,...)
```

You provide a *form_name* (1 to 31 characters long) and *form_number* (in the range 1 to 127). You may use the DESCRIPTION qualifier to include a description of the form which is sent to the printer between each file.

The /PAGE_SETUP parameter causes the specified module(s) to be downloaded to the printer between each page. The page is defined either by the /LENGTH form parameter or by the occurrence of a form-feed character.

» **Note:** *All text forms qualifiers are ignored if the emulation is not declared to be LN03 Plus, HP PCL, or Lineprinter.*

The following SETUP definition uses the set-up module BORDER.PS created earlier in this section:

```
$ DEFINE/FORM TOP_SECRET 99 -
_$ /DESCRIPTION= Confidential pages -
_$ /SETUP=BORDER -
_$ /PAGE_SETUP=(mod1_name,mod2_name,...)
```

If you use set-up modules and forms with the QMS printer, the set-up modules you reference must be inserted in the QMS$DEVCTL20.TLB library. See “Using Set-up Modules, Forms, and Characteristics” on page 5-3 for more information.

Users on the network may view the forms you have established by using this command:

```
$ SHOW QUEUE/FORM/FULL
```

## Length

The DEFINE/FORM command qualifier /LENGTH specifies the physical length of a form page in lines:

```
$ DEFINE/FORM/LENGTH=n
```

The default page length is 66 lines, which assumes a standard page length of 11" with 6 lines of print per inch. The value for *n* must be a positive integer greater than 0 and less than 255.

## Margin

The DEFINE/FORM command qualifier /MARGIN specifies one or more of the four margin options:

```
$ DEFINE/FORM/MARGIN=(option[,....])
```

| Option | Purpose |
|---|---|
| BOTTOM=*n* | Specifies the number of blank lines to leave between the end of the print image on a page and the end of the physical sheet of paper. The *n* parameter must be a positive integer that is less than the /LENGTH parameter. The default value is 6, which generally means a 1" bottom margin. |
| LEFT=*n* | Specifies the number of columns to be left blank between the leftmost printing position and the actual print image area. The *n* parameter must be a positive integer between 0 and the value of the /WIDTH parameter. The default value is 0, which means that the print image area starts as far to the left of the paper as the printer can go. |

| Option | Purpose |
|---|---|
| RIGHT=*n* | Specifies the number of columns to be left blank between the /WIDTH setting and the actual print image area. The *n* parameter must be a positive integer between 0 and the value of the /WIDTH parameter. When determining the /RIGHT parameter, start at the /WIDTH value and count to the left. The default value is 0, which means that the print image extends as far to the right as the /WIDTH value. |
| TOP=*n* | Specifies the number of blank lines to leave between the top of the physical page and the start of the print image. The *n* parameter must be a positive integer between 0 and the /LENGTH parameter. The default value is 0, which generally means that there is no top margin. |

## Page Setup

The DEFINE/FORM command qualifier /PAGE_SETUP specifies one or more modules that set up the device at the start of each page:

```
$ DEFINE/FORM/PAGE_SETUP=(module[,...])
```

The modules are located in the device control library. While the form is mounted, the system extracts the specified module and copies it to the printer before each page is printed.

## Setup

The DEFINE/FORM command qualifier /SETUP specifies one or more modules that set up the device at the start of each file:

```
$ DEFINE/FORM/SETUP=(module[,...])
```

The modules are located in the device control library. While the form is mounted, the system extracts the specified module and copies it to the printer before each file is printed.

## Truncate

The DEFINE/FORM command qualifier /TRUNCATE discards any characters that exceed the current line length specified by the /WIDTH and /MARGIN=RIGHT settings:

```
$ DEFINE/FORM/NOTRUNCATE
```

The /TRUNCATE qualifier is incompatible with the /WRAP qualifier because it forces /NOWRAP. If you specify both /NOTRUNCATE and /NOWRAP, the printer prints as many characters on a line as possible. This combination of qualifiers is useful for some types of graphics output.

## Width

The DEFINE/FORM command qualifier /WIDTH specifies the physical width of the paper in terms of columns or character positions. Any lines exceeding this value wrap if /WRAP is in effect or truncate if /TRUNCATE is in effect.

```
$ DEFINE/FORM/WIDTH
```

If both /NOTRUNCATE and /NOWRAP are specified, the maximum number of characters for the current font are printed on a line. If the /MARGIN=RIGHT qualifier is specified, its value overrides the /WIDTH value.

The value for the /WIDTH qualifier must be a positive integer greater than 0 and no more than 65535. The default value for the /WIDTH qualifier is 132.

## Wrap

The DEFINE/FORM command qualifier /WRAP specifies how the printer accommodates lines that exceed either the /WIDTH value or the /MARGIN=RIGHT value. The /WRAP qualifier causes print lines that exceed the current line width to wrap onto the next line.

```
$ DEFINE/FORM/WRAP
```

If you specify /WRAP, you cannot specify /TRUNCATE. The /WRAP qualifier forces /NOTRUNCATE.

If you specify both /NOWRAP and /NOTRUNCATE, the maximum characters for the current font are printed on a line. This combination of qualifiers is useful for some types of graphics output.

» **Note:** *LENGTH, MARGIN, TRUNCATE, PAGE_SETUP, WIDTH, and WRAP qualifiers are ignored if the job is not declared as LN03 Plus or HP PCL.*

### Feed

The PRINT command qualifier /FEED controls whether form feeds are inserted into the print job when the printer reaches the bottom margin of the form in use.

```
$ PRINT/NOFEED filename.ext
```

You can suppress this automatic form feed (without affecting any of the other carriage control functions that are in place) by using the /NOFEED qualifier. The /FEED and /NOFEED qualifiers do not affect user-formatted files and can be used to override the installation-defined defaults that are set for the output queue you are using.

This parameter is ignored if the job is not declared as either LN03 Plus, HP PCL, or Lineprinter.

## Device Control Libraries

After you create a set-up module, you must insert it into a library. The default library is QMS$DEVCTL20.TLB. For example, the following commands move the set-up module BORDER.PS into QMS$DEVCTL20.TLB:

```
$ LIBRARY/INSERT/TEXT -
_$ SYS$LIBRARY:QMS$DEVCTL20.TLB BORDER
```

» **Note:** *Do not remove any QMS modules from the QMS$DEVCTL20.TLB library.*

The print symbiont retrieves your set-up module and sends it, along with your file, to the printer when you use the /SETUP qualifier to the PRINT command. The following example uses the BORDER set-up module with the file MEMO.PS:

```
$ PRINT/SETUP=BORDER MEMO.PS
```

## QMS Device Control Library Module for DECnet Interface (QMS$RESET)

The QMS$RESET DECnet interface reset module contains commands which ensure proper file separation. It is used to return the system to a known state. Do not edit this module; instead create your own module using another name.

```
%!
%%IncludeFeature: newlayout (on)
statusdict dup begin /getjobsource known
{=string getjobsource} {(optional)}ifelse dup
(unknown) eq{pop 3}{(optional) eq{3}{4}ifelse
200 setemulation end
```

## QMS Device Control Library Modules for Serial/Parallel Interfaces (QMS$RESET_S)

The QMS$RESET_S serial/parallel reset module uses unprintable characters as follows:

```
<CTRL-D><ESC><DEL>0<CTRL-D>
```

This reset module is used to return the system to a known state. Do not edit this module for diagnostic purposes; instead create your own module using another name.

The following modules in the Device Control Library are used by the serial/parallel configured symbiont to change emulations on the serial interface of the printer:

- QMS$POSDOC_S
- QMS$LN0DOC_S
- QMS$HPGDOC_S
- QMS$HPPDOC_S
- QMS$CCIDOC_S
- QMS$ESPDOC_S
- QMS$QUIC_S
- QMS$LINEP_S

The following modules in the Device Control Library are used by the serial/parallel configured symbiont to change emulations on the parallel interface of the printer:

- QMS$POSDOC_P
- QMS$LN0DOC_P
- QMS$HPGDOC_P
- QMS$HPPDOC_P
- QMS$CCIDOC_P
- QMS$ESPDOC_P
- QMS$QUIC_P
- QMS$LINEP_P

## QMS Device Control Library Module for Serial/Parallel/DECnet Interfaces (QMS$HEADER)

The QMS$HEADER module contains PostScript job and file flag, burst, and trailer pages code.

## Order of Data Sent to the QMS Printer

| Data Sent | Origin |
|---|---|
| Job flag page | QUEUE/SEPARATE=FLAG |
| Job burst page | QUEUE/SEPARATE=BURST (PostScript jobs only) |
| File flag page for file *n* | PRINT/FLAG (PostScript jobs only) |
| File burst page for file *n* | PRINT/BURST (PostScript jobs only) |
| Form modules for file *n* | DEFINE/FORM/ SETUP=(module_name,..,..) |
| /SETUP modules for file *n* | PRINT/SETUP=(module_name,..,..) |
| /SETUP modules for logical | QMS$queue_name_SETUP |
| /PAGE_SETUP modules for page *n* | DEF/FORM/ PAGE_SETUP=(module_name,..,..) |
| file *n*, page *n* | User data (Loops to /PAGE_SETUP until all pages of file have printed.) |
| Reset modules | QUEUE/ SEPARATE=RESET(module_name,.. ,..) |
| File trailerpage for file *n* | PRINT/TRAILER (PostScript jobs only) |
| Job trailer page for file *n* | QUEUE/SEPARATE=TRAILER |

# Symbiont-Generated Special Pages

The job header page (also known as the job flag page generated by the symbiont) may contain the following information:

- Selected language
- Queue entry number
- Job name
- Host node name
- User login
- Print priority
- Execution queue and generic queue, if used
- A user-defined message (generated by the /NOTE qualifier)
- Printer node name
- Date and time job was queued
- Printer name and product name
- Account and rights list
- Form name
- Library name
- Command line qualifier

The job burst page prints immediately after the job flag page and is identical to the flag page except for a solid border.

The file flag contains the same information as the job header plus

- Device, path, and file name.
- File creation and modification date and time.
- File and maximum record size.
- A routing message (generated by the /NOTE qualifier).

The file burst page prints immediately after the file flag and is identical to the file flag page except for a solid border.

The file trailer page prints after each file in the print job. It contains all the information contained on the file flag page except the file size, and creation and modification information.

The job trailer page prints after the last file trailer page in the job. The job trailer page contains the same information as the file trailer pages except for the time that the transfer from the host to the printer finished.

Use the /NOTE qualifier to print a routing message on the header page. The message may contain up to 79 characters.

In addition to the job header and trailer, the printer can print an error page if the selected emulation is LN03 Plus. The error page summarizes any messages that occurred during job processing.

To specify that the banner pages are to be pulled from a specific input bin or tray, define the following logical:

```
DEFINE/SYSTEM QMS$execution_queue_CONTROL -
_$"INPUT=tray_name"
```

Refer to the characteristic file for the available bin or tray selections for your printer.

# prtpost: A PostScript Text Formatter

prtpost is a utility to format raw ASCII text files for printing on a PostScript printer. It is intended for users who want to print program listings without having to select an emulation (for example, HP PCL or HP-GL). It was integrated into the symbiont for users who require the ability to print text files in a number-up fashion.

By default, lines of text are displayed in 10 point Courier type at 7.2 lines per inch in portrait mode. A page header in 10 point Courier-

Bold displays the time and date of printing on the left, the filename centered in the middle, and the page number on the right. The header baseline is 0.5" from the top of the page, and has left and right margins of 0.5". The main body of text has a top margin 1" wide, a left margin 0.75" wide, and a bottom margin 0.5" wide. The right margin is determined by the right limit of the printer's imageable area. The fonts, point sizes, margins, orientation, line spacing, and several other parameters can all be altered by the user by means of command line options.

**prtpost** reads command line options in standard UNIX style: options come between the command name and the file argument, and each option is a one- or two-letter code preceded by a - character. If an option takes an argument, it may immediately follow the option code or be separated from it by a space. The arguments are provided to the symbiont in a queue logical much like the /PARAMETER logical QMS$*queue_name*_QUEUE. This logical must be named QMS$*queue_name*_NUP. For example,

```
$ DEFINE/SYSTEM QMS$ASCII2PS_NUP "-L -2 -N"
$ INITIALIZE/QUEUE/START/GENERIC=QMS_2025 ASCII2PS
$ PRINT/QUEUE=ASCII2PS QMS$HEADERDOC.PS
Job QMS$HEADERDOC (queue ASCII2PS, entry 8) started on QMS_4525
```

means print file QMS$HEADERDOC.PS in landscape orientation, 2-up printing (two pages on one side of the sheet of paper), with no header. Next a generic queue ASCII2PS (ASCII-to-PostScript) is created. This queue is pointing to the preexisting execution queue, QMS_2025. The option codes are cryptic, and there are many of them, but they offer you a high degree of control over the printed output. If you only want to use a few of the options, symbols can be written defining the logical for frequently used option combinations.

Margins and point sizes are specified in decipoints, where one decipoint is $^{1}/_{720}$". For point sizes, this amounts to multiplying by 10. For example, -F120 was used to select 12 point type above. Margins are measured in the default PostScript coordinate system: The origin is at the lower-left corner of the page, x increases to the right, and y increases upwards. For example, the upper-right corner of an 8.5" x 11" page would have an x coordinate of 6120 and a y coordinate of 7920.

## Options

Following is a list of all the options:

| This option . . . | does this . . . |
|---|---|
| -#*copies* | Selects the number of copies. |
| -2 | Sets text in two columns. The default is one column. |
| -4 | Prints four half-size pages per sheet (in other words, 4-up). |
| -B*modulename* | Identifies the beginning-of-page module. You may create a PostScript module which will be executed before each page is formatted. Because of PostScript's opaque paint imaging model, marks laid down by this module may be overwritten by the page. A possible use might be to print "CONFIDENTIAL" or "DRAFT" in grey letters across each page. |
| -bb*ydist* | Sets the body bottom margin. The last line on each page is printed at this distance from the bottom of the page. The default is 0.5" (360 decipoints). |
| -C*compression* | Sets the compression factor for the body font. This is a number from 1 to 500, representing the percentage by which the font's normal character width is compressed or expanded.<br>**Examples**<br>■ -C50 produces a half-wide font.<br>■ -C200 produces a double-wide font.<br>■ The default pitch is10 pt. Courier is 12 cpi. -C72 causes it to print at 16.66 cpi. |
| -c*compression* | Sets the compression factor for the header font. |

| This option . . . | does this . . . |
|---|---|
| -E*modulename* | Identifies the end-of-page module. You may create a PostScript module which will be executed after each page is formatted. Because of PostScript's opaque paint imaging model, marks laid down by this module may overwrite the page text. Possible uses might be to draw borders around each page, print a company logo, or print a custom page header. |
| -F*font* | Selects the body font (the PostScript font, resident or downloaded, to be used for the main body of text. |
| -f*font* | Selects the header font. |
| -G*size* | Sets the page size. *size* is a code from 0 to 5, as follows:<br><br>**code** **paper size** **dimensions**<br><br>0 letter 8.5" x 11"<br>1 legal 8.5" x 14"<br>2 ledger 11" x 17"<br>3 A3 297 mm x 420 mm<br>4 A4 210 mm x 297 mm<br>5 B5 182 mm x 257 mm<br>6 A5 148 mm x 210 mm<br>7 B4 257 mm x 364 mm<br>8 executive 8.25" x 10.5"<br><br>The default margins are based on the page size. |
| -L | Selects landscape orientation. The default is portrait. |
| -lb*xdist* | Sets the body left margin (in decipoints). The main text begins printing at this distance from the left edge of the page. The default is 0.75" (540 decipoints). |
| -lh*xdist* | Sets the header left margin. The header time and date are printed at this distance from the left edge of the paper. The default is 0.5" (360 decipoints). |

| This option . . . | does this . . . |
|---|---|
| -I*lpi* | Sets the number of lines per inch x 100. Line spacing defaults to the point size.<br>**Examples**<br>■ Lines in a 12 pt. font are spaced $^{12}/_{72}$" ($^{1}/_{6}$") apart, resulting in 6 lpi.<br>■ -I400 produces 4 lpi.<br>■ -I850 produces 8.5 lpi. |
| -N | Turns off the header. The default is to print a header for every page. |
| -n | Prefixes each line with a 5-digit line number. The default is no line numbers. |
| -P*size* | Sets the size of the font used for the main body of text (in decipoints). |
| -p*size* | Sets the size of the font used for the headers (in decipoints). |
| -rh*xdist* | Sets the header right margin. The header page number is printed right-justified at this distance from the left edge of the paper. The default is the paper width less 0.5" (360 decipoints). |
| -tb*ydist* | Sets the body top margin (in decipoints). The main text begins printing at this distance from the bottom of the page. The default is page length less 1" (720 decipoints).<br>**Example**<br>■ To leave a 2" top margin on legal- size paper, set tb to (14 - 2)x720 = 8640. |
| -th*ydist* | Sets the header top margin. The page header is printed at this distance from the bottom of the page. The default is page length less 0.5" (360 decipoints). |

| This option . . . | does this . . . |
|---|---|
| -X | Does not separate columns with a rule line. In two-column mode, a vertical line normally separates the columns. |
| -Z | Does not separate 4-up pages with rule lines. Normally, two lines are drawn in a cross to separate the miniature pages. |

## Notes to the Option Table

- **-2 Option**—When the -2 option is selected in conjunction with landscape mode, the effect is similar to printing pages 2-up. There is still only one logical page, however, so only one header is printed. Library modules invoked by the -B and -E options are likewise only executed once. The user should note that there is no provision for lists of modules as found with the /SETUP command used with VMS printing. The default font for this combination is 7 point Courier.
- **-4 Option**—When the -4 option is selected, all attributes of each page, including the header, margins, fonts, and any marks made by beginning-of-page and end-of-page files, are scaled to half size. Four miniature replicas of a full-size page are printed on each page. The -4, -2, and -L options may all be used together, resulting in an effective 8-up appearance. The default type is 3.5 pt. Courier, which is still large enough to be legible.
- **-B and -E Options**—The -B and -E options are intended for users with some knowledge of PostScript. Three PostScript strings can be accessed by the files used with these options:

  | Name | Contents |
  |---|---|
  | DT | Time and Date |
  | PG | Page Number |
  | FL | Job Name |

  These strings can be used to design custom page headers, in conjunction with the -N option, to turn off the default header. The format of the DT string is illustrated by the following example:

  ```
  16-OCT-1997 15:42:56
  ```

All of the fields are constant width, so the PostScript **getinterval** operator can be used to break up the string and rearrange the fields, if desired. The coordinate system inherited by the beginning- and end-of-page files is not quite the default coordinate system: the origin is still in the lower-left corner, but the units are scaled to decipoints ($^{1}/_{720}$") in both directions.

If the -4 option is used, the whole page is scaled and repositioned. You should treat this case the same as the one-page-per-sheet case, remembering that the beginning-of-page and end-of-page files are executed four times per sheet, once for each reduced page. It is important to bracket the custom PostScript with **gsave** and **grestore**; otherwise the main page inherits any changes made to the graphics state, and unexpected output may result.

Beginning-of-page and end-of-page modules should be added to the device control library as documented for the creation of / SETUP modules. Here is a sample beginning-of-page module which prints “CONFIDENTIAL” diagonally across a letter-size page in gray letters about 0.5" high:

```
gsave
52.3 rotate
/Helvetica findfont 540 scalefont setfont
3047 -202 moveto (CONFIDENTIAL) show
grestore
```

» **Note:** *The above description of **prtpost** is also contained in the SYS$TEXT:[QMSTEXT]prtpost.ps file.You can print this file if you need a hard copy.*

❖

# 6

# Troubleshooting

## In This Chapter . . .

- Installation error messages
- Troubleshooting diagrams to aid in locating and solving installation problems
- Stopping queues

# Error Messages

The following messages may occur during installation of the host software. Messages have the format

%QMSSMBPSE-*severity-identification, message*

## Severity Identification

The codes indicating the *severity* of messages are as follows:

| This severity-identification letter... | means the message is... | The installation... |
|---|---|---|
| I | Informational | Is not affected |
| W | Warning | Is not affected |
| E | Error | Fails |
| F | Fatal error | Fails |

## Messages

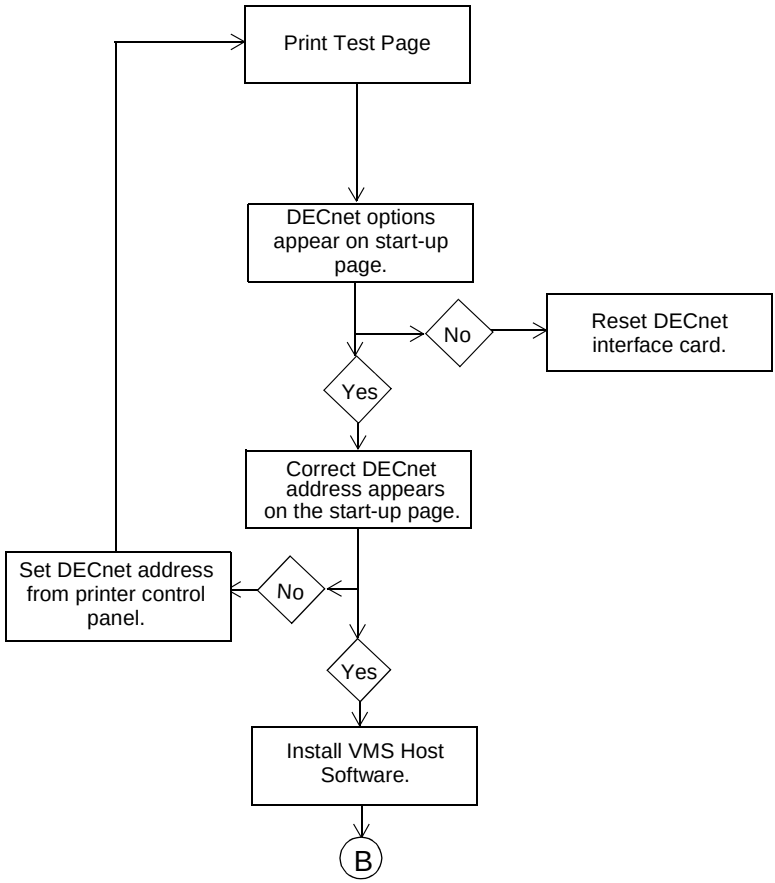
| This message... | means... | Notes |
|---|---|---|
| ADDRFORMINV | The address has an invalid form. | The node address of the printer must consist of an area number (01 to 63) and a node number (0000 to 1023). The valid format for the network address is *area_number.node_number*. |
| ADRCHG | The executor MAXIMUM ADDRESS was increased. | You specified an address that was beyond the current NCP maximum address setting. The installation program automatically extended the maximum setting to accommodate your address. |
| AREAADDRINV | The area address is missing or invalid. | The valid format for the network address is *area_number.node_number*. The area number must be between 01 and 63. |

| This message... | means... | Notes |
|---|---|---|
| CLEANUP | Exiting, VMSINSTAL cleaning up... | Files are being restored after a terminated installation. |
| DECNETREQ | DECnet must be running to install this product! | Start the DECnet network software before installing the host software. To start DECnet, use the command `@SYS$MANAGER:STARTNET` |
| DSKSPACLOW | This installation requires 20,000 blocks of free space! | Your system does not have the required number of blocks available for installing the software. |
| FILEERROR | An error occurred accessing the file. | A file required for installation could not be found or opened. After this error the installation stops. |
| NAMTOOLNG | The node name entered exceeds the six-character limit. | A valid name may have up to six characters (alphabetic or numeric) with at least one alphabetic character. |
| NAMWRGCHR | The node name entered contains illegal characters. | The node name must have at least one alphabetic character. The characters $ and _ may also be used in the name. |
| NODEADDRINV | The node address is missing or invalid. | The valid format for the network address is *area_number.node_number*. The node number must be between 0000 and 1023. |
| NODEADDRREQ | A node address is required for the installation of the QMS printer. | You didn't supply a node address for the printer. The address must be a unique identifier, consisting of an area number (01 to 63) and a node number (0000 to 1023). |

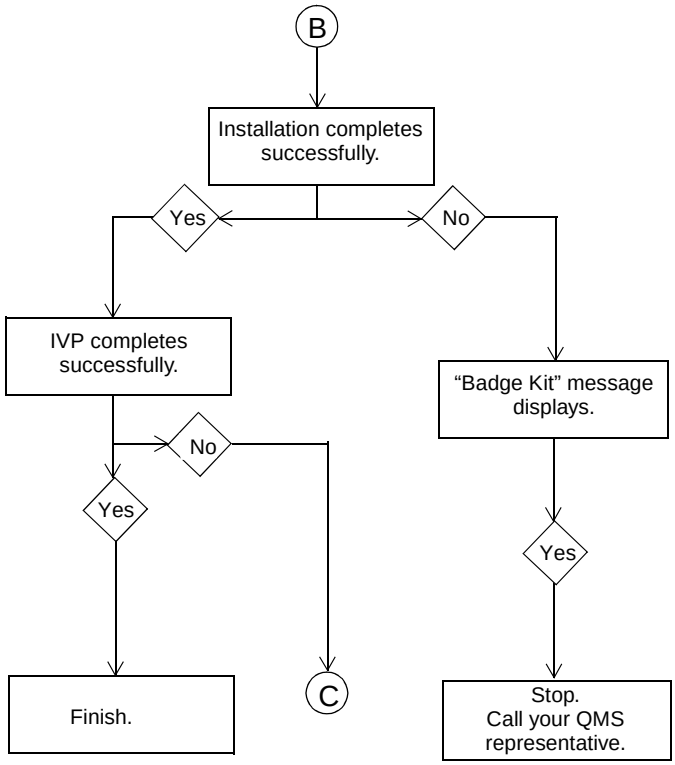
| This message... | means... | Notes |
|---|---|---|
| NODNAMREQ | A node name is required for the installation of the QMS printer. | You didn't supply a node name for the printer. The printer's node name must be a unique identifier on your network, consisting of up to six characters (alphabetic or numeric) with at least one alphabetic character. |
| NOPSEXEC | PS Executive will not be installed. | You requested that the installation program not automatically load the QMS PS Executive Series Utilities. |

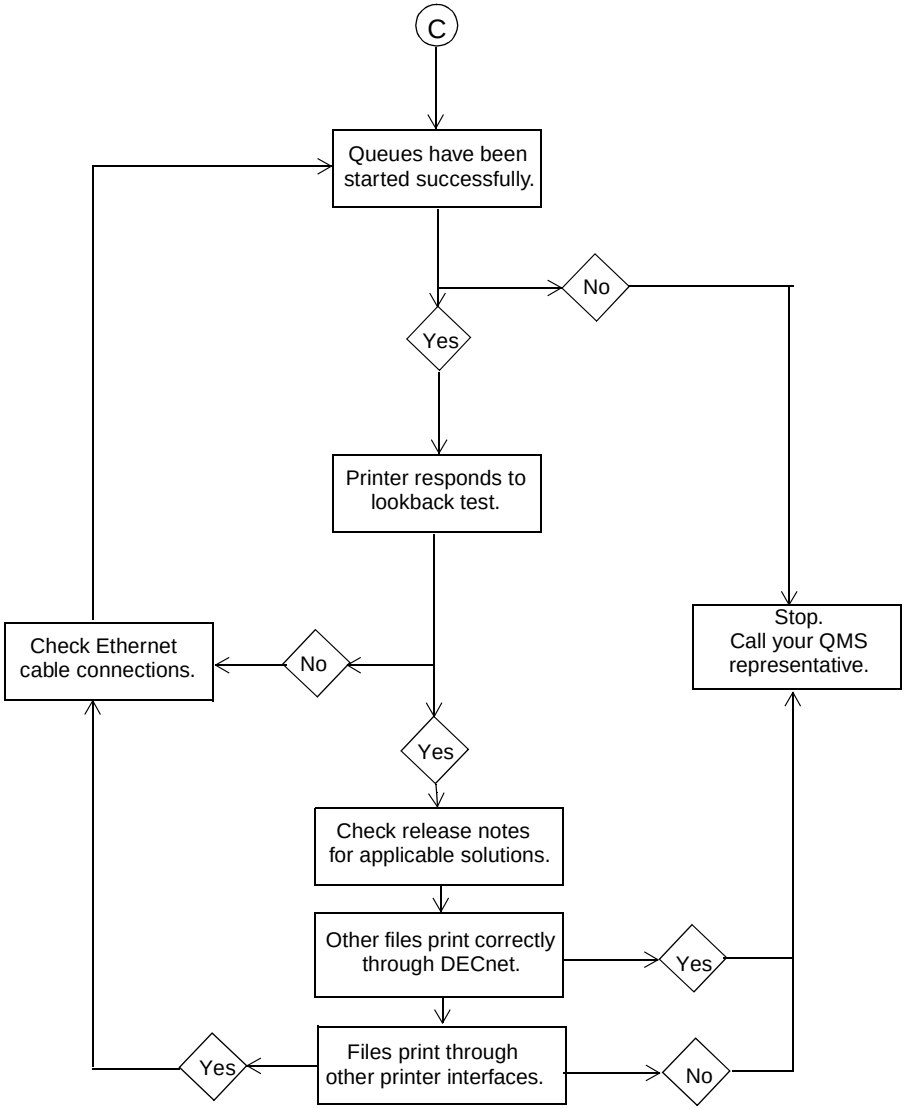
# Troubleshooting Charts

Use these charts for tracking down problems with the host software installation program.



Installation completes successfully.




C
Queues have been started successfully.
No
Yes
Printer responds to lookback test.
Stop.
Call your QMS representative.
Check Ethernet cable connections.
No
Yes
Check release notes for applicable solutions.
Other files print correctly through DECnet.
Yes
Files print through other printer interfaces.
Yes
No

# Disabling a Printer Interface

Each interface on the printer is active at all times. If you want to deactivate any interfaces that you do not use (preventing access to the printer from those interfaces), you may do so from the printer control panel.

1. **If the printer is on line, press the Online/Offline key. Press the Menu key to open the printer Configuration menu.**
2. **Press the Next key until the message window displays `ADMINISTRATION` and press the Select key.**
3. **Press the Next key until the message window displays `COMMUNICATIONS` and press the Select key.**
4. **Press the Next key until the message window displays the interface you want to disable and press the Select key.**
5. **Press the Next key until the message window displays `MODE` and press the Select key.**
6. **Press the Next key until the message window displays `DISABLED` and press Select.**
7. **Press the Online/Offline key.**
8. **Cycle the printer off and back on.**

Repeat these steps for each interface you want to disable.

# Dataproducts Printing

When using the Dataproducts option, set the Administration/Communications/Parallel/Data Bits menu to 7 Bits. If it is set to 8 Bits, your data will not print correctly.

# No HSL Messages from the Printer

If no messages are sent from the printer even though HSL was installed, ensure that the HSL option is enabled (Administration/Emulations/DECnet-TCP/IP/DECnet HSL menu).

If there is no process ID assigned to the HSL application, then HSL is not running. See chapter 2, “DECnet Host Software Installation,” for more information about the HSL application.

❖

# A

# QMS Customer Support

## In This Appendix. . .

- Sources of customer support
- QMS world-wide offices

# Sources of Support

Several sources of help and information are available, depending on the type of help you need:

## Your QMS Vendor

Your local vendor (the one from whom you bought the printer) may be best equipped to help you. Your vendor has specially trained service technicians available to answer questions, and the equipment to analyze your printer problems.

## Your Application Vendor

Often, “printing” problems have more to do with the application being used than with the printer. In this case, the application manufacturer is the best source of help.

## Q-FAX

Q-FAX, a QMS information retrieval service, provides application notes, technical support notes on common printing problems, and information about printer specifications, options, accessories, consumables, and prices.

In the United States and Canada, call (800) 633-7213 to reach Q-FAX. In all other countries, call (334) 633-3850. Have your fax number handy when you call (or place the call from your fax machine's handset).

You can choose to have either a directory (a list of currently available documents) or a specific document sent to you. The first time you call, request the directory (press 2 on your phone or fax keypad when prompted). Then call back to request specific documents. You can order up to three documents per call.

» **Note:** *FAQ numbers may be subject to change, so you may want to obtain a directory of Q-FAX documents before requesting a specific document.*

## The QMS Corporate Bulletin Board System

The QMS Corporate Bulletin Board System (BBS) contains technical support notes, application notes, drivers, patches, and utilities, and you may leave technical questions not requiring an immediate response on electronic mail for the Sysop (System Operator).

The bulletin board [(334) 633-3632] operates at 1200, 2400, 9600, and 14400 baud, 8 data bits, no parity, 1 stop bit, with XMODEM, YMODEM, and ZMODEM capabilities. Contact the QMS Customer Response Center (CRC) for more information about the bulletin board.

## CompuServe

Through CompuServe, you ask general (non-technical) questions, share information with other users, and access printing information and programs. When you use CompuServe, type `go qmsprint↵` to go directly to the forum where QMS is located. The QMS library section contains application notes, printer drivers, utilities, technical information, and announcement files.

## Internet

The QMS server provides access to technical reports, new product announcements, a trade show schedule, and other general information about QMS.

If you have access to the World Wide Web, you can view the QMS home page at http://www.qms.com/. The QMS ftp resource is ftp.qms.com.

## QMS Customer Response Center (CRC)

You can contact the QMS Customer Response Center (CRC) in three different ways:

- **Telephone**—You can call the CRC at (334) 633-4500 (US) Monday–Friday, 7:00 am–6:00 pm, Central Time.

» **Note:** *If you call for assistance, have the following information ready so our technicians can help you more quickly:*

  - ☑ Your phone number, fax number, and shipping address
  - ☑ A description of the problem
  - ☑ The printer model
  - ☑ The type of host computer you're using
  - ☑ The type and version of operating system you're using
  - ☑ The interface you're using, and, if serial, the protocol (for example, XON/XOFF)
  - ☑ The application and version you're using
  - ☑ The emulation you're using
  - ☑ Your printer firmware version (listed on the status/start-up pages)

- **Fax**—You can fax questions to the CRC at (334) 633-3716 (US). Provide the same information as listed above, and indicate whether you would like a faxed or a phoned reply.
- **Internet**—If you have access to the World Wide Web, you can access the CRC through the QMS home page at http://www.qms.com/

# QMS World-wide Offices

## QMS United States and Latin America

**General Contact**
1 (334) 633-4300
Fax 1 (334) 633-4866
Email info@qms.com
Internet http://www.qms.com

**Customer Response Center (CRC)**
Technical Assistance
1 (334) 633-4500 7:00 am–6:00 pm Central Time
Fax 1 (334) 633-3716
Internet http://www.qms.com
Bulletin Board Service
1 (334) 633-3632

**Latin America Fax**
1 (334) 639-3347

**National Service**
Service Information, Installation, and Maintenance Pricing
1 (800) 762-8894
On-Site Service and Depot Repair Information
1 (800) 858-1597 7:00 am–7:00 pm Central Time
Spare Parts Ordering and Information
1 (334) 633-4300 x2530 8:00 am–5:00 pm Central Time

## QMS Canada

**General Contact**
1 (514) 333-5940
Fax 1 (514) 333-5949
Supplies and Accessories 1 (800) 268-0343 x223

**National Service**
On-Site Service and Depot Repair Information
1 (800) 268-4969 8:30 am–7:00 pm Eastern Time
Spare Parts Ordering and Information
1 (905) 206-9234 x238 8:30 am–5:00 pm Eastern Time

**Bulletin Board Service**
1 (905) 206-0084

## QMS in Japan

**General Contact**
(+81)- 3 3779-9600
Fax (+81)-3 3779-9650
nternet http://www.qmsj.co.jp

## QMS in Latin America

**General Contact**
Cra 43 DD#8-42
Officina 201
Medellin, Colombia
(+57) (4) 312 13 70
Fax (+57) (4) 268 92 97

## QMS Europe

| | |
|---|---|
| **Australia** | Anitech<br>Sydney Business & Tech. Centre<br>52/2 Railway Parade<br>2141 Lidcombe NSW<br>Australia<br>(+61) 2–9901 3235<br>Fax (+61) 2–9901 3273 |
| **Benelux**<br><br>**Belgium, Netherlands, and all unlisted countries** | Planetenbaan 60 ‘Corner Plaza’<br>3606 AK Maarssen<br>The Netherlands<br>(+31) 346–551333<br>Fax (+31) 346–550170<br>Internet http://www.qms.nl |
| **France** | Vélizy Plus<br>1 Bis, Rue du Petit Clamart<br>78142 Vélizy Cedex<br>France<br>(+33) 1–410 79 393<br>Fax (+33) 1–408 30 110 |
| **GMBH**<br><br>**Germany and Austria** | Willstätterstrasse 10<br>40549 Düsseldorf<br>Germany<br>(+49) 211–596 1333<br>Fax (+49) 211–596 1397 |

| | |
|---|---|
| **Italy** | Via della Repubblica 56<br>43100 Parma<br>Italy<br>(+39) 52–1231 998<br>Fax (+39) 52–1232 902 |
| **Nordic**<br>**Sweden, Finland, Norway, and Denmark** | Arenavägen 41, 6th floor<br>121 77 Johanneshov<br>Sweden<br>(+46) 8–600 01 30<br>Fax (+46) 8–600 01 33 |
| **South Africa** | Saskay House<br>Unit 24 Sunninghill Business Park<br>Peltier Road, Sunninghill, Johannesburg<br>Republic of South Africa<br>(+27) 11–807 6957<br>Fax (+27) 11–807 6960 |
| **Spain** | Josefa Valcárcel 8<br>28027 Madrid<br>Spain<br>(+34) 1– 742 5013<br>Fax (+34) 1–742 3152 |
| **UK**<br>**United Kingdom and Ireland** | Old Bridge House, The Hythe<br>Staines, Middlesex TW18 3JF<br>United Kingdom<br>(+44) 1784–442255<br>Fax (+44) 1784–461641 |

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